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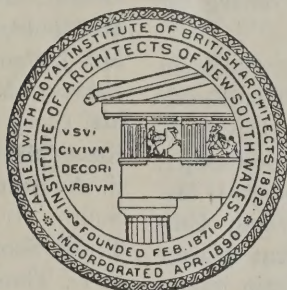
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THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



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INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

ANNUAL DINNER

The annual dinner of the Institute of Architects of New South Wales held on the evening of December 13th in the new banqueting hall of the Hotel Australia, was one of the most successful functions ever held by the Institute. It was graced by the presence of the State Governor, Sir Walter E. Davidson, K.C.M.G., who was in a most happy mood, and there were many distinguished guests from kindred and allied societies.

The function took the nature of a celebration of the successful issue of the Institute's efforts to obtain registration, which was obtained during the present session of the State Parliament.

There were present as guests of the President (Mr. G. H. Godsell) the following:—His Excellency the Governor, Sir Walter E. Davidson, K.C.M.G., and Major Egerton (Aide-de-Camp), Mr. E. C. Andrews (President Royal Society), Mr. H. E. Barff (Warden and Registrar Sydney University), Mr. E. H. Buchanan (President Master Builders' Association), Honourable Austin Chapman, M.P., Mr. J. H. Cardew (President Institution of Engineers), Mr. W. F. Foster, Mr. W. Gawne, Mr. W. H. Howe, Mr. A. Howie (senr.), Mr. A. Howie (junr.), Mr. W. G. Hull, Mr. A. C. Hargrove, Mr. A. S. Hook (President Architects' Association), Mr. J. Harding, Mr. W. Lister-Lister (President Royal Art Society), Mr. John J. Lough, Mr. W. K. Moffat, Mr. F. Porter, Mr. J. M. Pringle, Mr. J. Maitland Paxton (Chairman Chamber of Commerce), Mr. A. Peters, Mr. C. A. Reed, Mr. C. M. C. Shannon (General Manager Australian Bank of Commerce), Mr. S. Ure Smith, Mr. J. A. Thompson, Mr. W. Thompson, Mr. W. Tilley (Chairman of Directors Hotel Australia), Mr. J. P. Tivey (Institution of Engineers), Mr. H. J. Wagstaff, Mr. G. Wright (Farmer & Co.), Mr. J. Wall, Mr. T. Wall.

Members and Members' guests were as follows: Mr. J. S. Adam, Mr. A. W. Anderson, Mr. H. E. Budden, Mr. S. H. Buchanan, Mr. W. G. Barry, Mr. F. I. A. Bloomfield, Mr. F. Buckle, Mr. J. Barr, Mr. J. Burcham Clamp, Mr. C. W. Chambers, Mr. A. L. Clark, Mr. J. J. Copeman, Mr. H. Carter, Mr. H. C. Day, Mr. W. de Putron, Mr. W. O. England, Mr. D. Esplin, Mr. J. C. Fowell, Mr. B.

W. Ford, Mr. C. Greenwell, Mr. G. L. Grant, Mr. C. Glancey, Mr. F. Glynn Gilling, Mr. T. W. Hodgson, Mr. J. N. Hoare, Mr. M. B. Halligan, Mr. G. N. Hughes, Mr. R. Keith Harris, Mr. N. Hampson, Mr. L. F. Herbert, Mr. B. Hadley, Mr. G. Sydney Jones, Mr. J. E. Justelius, Mr. H. O. Jackson, Mr. G. S. Keesing, Mr. J. A. Kerr, Mr. H. C. Kent, Mr. J. W. H. Lake, Mr. H. Lockley, Mr. A. MacQueen, Mr. J. D. Moore, Mr. H. C. Manfred, Mr. F. Moorhouse, Mr. H. B. MacIntosh, Mr. J. C. R. Mills, Mr. D. T. Morrow, Mr. S. R. Maisey, Mr. H. P. Morris, Mr. T. J. Marks, Mr. S. M. Mould, Mr. L. C. McCredie, Mr. T. J. McCarthy, Mr. J. Peddle, Mr. W. H. Pender, Mr. R. A. de T. Prevost, Mr. S. Robertson, Mr. P. E. Rancland, Mr. C. C. Ruwald, Mr. R. Richardson, Mr. H. E. Ross, Mr. H. Ruskin Rowe, Mr. A. Sparke, Mr. S. A. Seaton, Mr. H. Stocker, Mr. F. Trenchard Smith, Mr. A. R. Saunders, Mr. E. A. Scott, Mr. T. M. Scott, Mr. A. Spain, Mr. L. J. Soden, Mr. S. G. Thorp, Mr. B. Tojkander, Mr. Reg. Taylor, Mr. H. V. Vernon, Mr. D. V. Walford, Mr. H. A. Wilshire, Mr. F. W. B. Wilton, Mr. F. Winn, Mr. H. C. Waterston, Capt. J. H. Watson, Mr. S. Warden, Mr. C. R. Winter, Professor Leslie Wilkinson, Mr. B. J. Waterhouse (Vice-President), and Mr. E. Wood.

Apologies were received from Sir George Fuller, Mr. H. E. Pratten, Col. J. A. Murdoch, Mr. E. P. Simpson, Sir Charles Rosenthal, Mr. T. F. Cosh, Mr. C. Hamilton, Mr. Jack F. Hennessy, Mr. A. L. McCredie, Mr. S. S. Oxenham, Mr. Varney Parkes and Mr. R. W. Pickering.

The President of the Institute, Mr. G. H. Godsell, after the health of *His Majesty the King* had been duly honoured, proposed the health of *The State Governor*, Sir Walter Davidson. He said: "Every Member of the Institute of Architects feels deeply the honour conferred upon the Architectural profession by the presence of his Excellency here tonight. The last occasion upon which the Institute was honoured by the presence of the King's Representative was in 1913 when Sir Gerald Strickland kindly consented to meet the Members of the Institute and we should feel ourselves doubly honoured by the fact that his Excellency was so good as to

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consider that this occasion was one of such importance as warranted him in being present, although at the time he accepted our invitation he knew that in the ordinary course of events he would be resting for a short vacation at his country seat.

"Every gentleman here knows and appreciates the splendid services of his Excellency to New South Wales and of his genuine interest in Art and Architecture, and further of his Excellency's goodness of heart, which has endeared him to the people of this State—may he long remain amongst us.

Gentlemen, I give you the toast of *His Excellency the State Governor.*"

Sir Walter Davidson, in responding, said:—

"When you gentlemen made up your minds you were going to get registered you set your minds firmly on your object. You have fought for your union and you have succeeded in accomplishing it. I congratulate you on the success of your bulldog pertinacity. You have made me think a good deal about Union, being at present more or less in that atmosphere (laughter). Your organisation had only need to call me, and I came; nothing would have kept me away save the downfall of Parliament. (Laughter.)

"If it had been yesterday when your celebration took place I would have felt sorry. To-day I feel quite pleased. Parliament has behaved awfully well. When the Speaker left you might have expected a certain amount of animus. There wasn't! It was done in the most courteous manner. There are people who say that the Labour Government could not put up with defeat. Believe me, gentlemen, they behaved like gentlemen.

"I am not revealing a secret when I state that my late Premier came to me and asked for certain things that it was impossible to give him. He took things wonderfully well when he found he could not get what he wanted.

"I appreciate the courtesy and consideration shown by the Labour Government throughout the whole crisis.

"The whole world is looking at New South Wales, because it is an experimental country—a new democracy. Some thought it might get into trouble, but it hasn't. People are looking to see how this State behaves, and it has behaved astonishingly well.

"Another reason why I have come to join in the celebration of this happy occasion is because I realise that the work of the architect in a young country like New South Wales can have an immense influence on the type of city we are going to have.

"Of the two men I admire most, Herbert Baker and Rudyard Kipling, both men of great imagination, one—Herbert Baker—is a great architect. I have, therefore, some understanding of architectural work, as I was closely associated with Herbert Baker in South Africa.

"Now you have the chance of doing wonderful things in this beautiful State. There is no city in the world to compare with Sydney, as far as nature goes, and it is your privilege to add to and improve this beautiful work." (Loud applause.)

"From your point of view, who want to create a 'city beautiful,' there is no city which grants greater opportunities to the realisation of this aim than does Sydney.

"There was more opportunity, too, this morning than there was last night. There is more hope that people can improve their property, without putting up anything more than the minimum charges for water and sewerage. (Laughter.)

"My home in Sydney is to me the most charming and interesting house in Australia; if you can live up to the standard your forefathers set for you when building Government House you will not be far astray. You have certain ideals, certain standards, I have confidence in your will to succeed in attaining them. It is for you to do the rest." (Loud applause.)

Cordial and enthusiastic appreciation of the work of Mr. Mutch, M.L.A., in putting the Registration Bill through, and the earnest hope that the work to be done in Canberra will be worthy of the capital of this great country, were leading points of the speech of the Vice-President of the Institute, Mr. B. J. Waterhouse, who proposed the toast of *The State and Federal Parliaments.*

Mr. Waterhouse stated: "We are naturally gratified and pardonably proud that another of our aims has been transmuted by the magic wand of Parliament into an achievement.

"We felt that registration could not long be deferred after so important a step as the establishment of a Chair of Architecture at the University. It was the only logical sequence.

"The comprehensive university or technical college course, necessitating four or probably five years' work, to be followed by travel and a period in an architect's office before commencing practice, deserves all the protection the Bill can bestow upon those who successfully pass through either course.

"To have had to contend upon completion of such work with even the advertised competition of the man who described himself estate agent, builder,

undertaker and architect—well, perhaps it would have tended not to make the profession the close corporation mentioned by some of our friends during the passage of the Bill.

"Whether the educational courses referred to, and the protection the Bill affords will produce the men we hope to be the leaders of the profession in the near future is at present in the lap of the 'gods.'

"An architect's life is 'truly not a happy one.' He is expected to be 'practical about drain pipes, poetical about gables and gargoyles, and to possess the business acumen of a Wall Street stock broker.'

"Only recently an architect was confronted with a dilemma which even these accomplishments failed to cover and probably would have stressed the skill of the most successful product of Professor Wilkinson's School.

"The sketch submitted to the client did not quite appeal, for, after some pensive moments of consideration the judgment was delivered: 'No! No! What I want is something severe and ecclesiastical, yet rustic and pretty.' (Laughter.)

"Well, gentlemen, such things as Registration Bills and Chairs of Architecture though consistently advocated by those interested are not materialised without the generous help of Ministers and Parliament, and in this instance we have to thank Mr. Mutch for his vigorous support of a measure which probably caused him great anxiety. (Applause.)

"We have no desire for any close corporation which will not benefit the public as much as it protects the profession, and we trust that future Parliaments will realise that legislation conducive to professional and civic advancement is deserving of continuity of policy and above party politics.

"We thank Mr. Mutch most sincerely, but as gratitude has been defined as a lively sense of favours to come we would indicate our desire for some board, body, commission—call it what you will—with the power to control and regulate the many tendencies which we think at present are drifting in a manner detrimental to the beautification and welfare of our city.

"The Institute of Architects, the Town Planning Association, the Public Monuments Advisory Board, and many other bodies are too lacking in co-ordination to produce effective results.

"Ours is a rapidly developing city and unless we quickly realise that it should be upon a pre-conceived plan, and that a few fine yet isolated buildings do not make a dignified city—we are neglecting a civic duty and posterity will know us for what we are.

"It is perhaps only necessary to mention a few missed opportunities known to most of us. Have we made the most of that beautiful site known as 'The Rocks'?

"Are we proud of the flat-ruined foreshores of Shellcove, the malignant growth over the fair face of Cremorne, or the rapidly-arising slum-areas of Darlinghurst?

"Maybe, gentlemen, we shall be considered idealists, visionaries, because these things hurt us, but are we not beginning to realize—are not nations beginning to realize—that idealism pays, and pays handsomely in every way—as America long since discovered.

"A visitor entering Sydney should feel the same exhilaration of spirit that Paris or Washington produces.

"Gentlemen, such results can be accomplished in Sydney if we only attack the problem in a comprehensive manner. What shall it profit us if we entirely neglect the ideal for a momentary profit? Prosperity will not judge us by records of commercial prosperity, but by the undying results of our monuments and civic beautification.

"A civic Advisory Board could be formed in Sydney to-morrow, comprising men eminent in architectural, professional, artistic and commercial life who would—as they do in many other parts of the world—be proud to render service gratuitously for the benefit of the city.

"In the Federal arena our eyes are focussed upon the much-discussed Canberra, and our guest, Mr. Austen Chapman, must be running the risk of astigmatism from the same duties.

"Many of the profession undoubtedly feel that to ask for an opportunity to finalize and submit designs for Parliament House is only a fair request, because in many instances a great amount of work has been done.

"If that policy had been followed, probably portion of the structure could have been erected permanently and adapted temporarily to accommodate the House and Senate, instead of erecting for that purpose a temporary structure which it is reported will cost £100,000.

"We trust that in the near future our young architects anxious to be associated with the national monuments of our country, will be afforded an opportunity—to which undoubtedly they are entitled—to crystalize their aspirations in this direction.

"I must apologize, Mr. Chairman, for taking up so much time. I will now propose the toast of

the State Parliament, so closely associated with our Bill, coupled with the name of Mr. Mutch.

"I have also pleasure in proposing the toast of the Federal Parliament, coupled with the name of **Mr. Austin Chapman.**" (Loud applause.)

The Hon. Austin Chapman, M.H.R., in responding to the toast of *The State and Federal Parliaments*, said, in opening, that it was an honour to be present on the same occasion as the King's representative in this State, Sir Walter Davidson, who so differently circumstanced from the unfortunate politicians was happy and comfortable, whatever the political outcome. Continuing, he said that the Britisher liked fair play, and it was a pleasure to him, as an opponent of the previous (Labour) Government to hear Sir Walter speak as he had done.

The Institute of Architects owed a great deal to Mr. Mutch for having pushed their Bill through, and it would be for the benefit of the general public as well as the architects. It would be well if there could be something similar in the Federal department.

"We were trying to build a capital, 'a city beautiful,' to be a credit to this Australia of ours, a country, too, in which private enterprise and personal ambition would still have an opportunity. Past events proved that this spirit had been the making of Australia. Australia had proved herself, on many a hard fought field in the late war, capable of producing men and doing things as good as anything that could be done in the old world."

The speaker expressed his pride at being able to respond to the toast, as it had been his privilege to have served himself in both the State and Federal arenas, and it had also been his privilege to have been the associate of many men who helped to make history in the past. He confessed that to-day he could not see any men like them in the political arena.

For his part he considered that Australia should have only one Parliament. He firmly believed that the time had come when one Government would be enough. He suggested, amid applause, that Sir Walter Davidson should be the Governor of that United Australia. If they could only get him selected as Governor by popular vote of the people they would get him right away. (Loud applause.)

He expressed the hope that the Federal Parliament would be sitting at Canberra within three years. He asserted that they had been at Melbourne too long.

There had been too much Victorian influence. The time had come when they should assert them-

selves and oust Victoria from the doormat. It was time that the Federal Parliament at Canberra was begun, and he could see no occasion at all why the temporary Parliament building to be erected should not be so designed as to ultimately become a part of the permanent Parliament House.

He hoped that the competition for the new Parliament House would be proceeded with and that an Australian architect would be the winner of the successful design. He stated that he was glad to see that some Australian architects had been selected to do some work in India, where they had won on their merits. (Loud applause.)

It was, he thought, certainly time that something was done at Canberra. Last session they had succeeded in getting some money voted, and they would get started. They hoped that the new Parliament buildings at Canberra would be in a city that would be a credit to Australia. It should be the Parliament House of a one Parliament Australia.

Taking up the question of obtaining the population that Australia requires for the development of the country he expressed the opinion that if Australia was ever to be adequately developed they must open the doors, unlock the land, and make the school bell toll where now the sheep bells tinkle.

Australia is the greatest country on God's earth, and it is up to Australians to make the country what it ought to be. The best way this could be done was to develop it. Settlers are the life of the country, they must be obtained. Our cities should be made, too, real "cities beautiful."

The toast of *The Institute of Architects of New South Wales* was then proposed by His Excellency the Governor.

"I congratulate you very much," he said; "you must be filled with great pride at having obtained your desire. The Architect of the Universe is the head of your profession, so you must have a high standard to live up to. All the architects of my acquaintance are gentlemen, and they have done splendid work."

Sir Walter then alluded to the beautiful houses of Parliament built in South Africa, at Pretoria, while he was there. He explained that South Africa did not want everything at Capetown, and the same attitude with regard to Melbourne had been made clear by the architects.

"In those days in South Africa," he said, "we did not have to worry too much about the democracy. We supplied all the laws we required in my office. We decided upon things and we did them before people had time to think! (Laughter.) Anything submitted in the way of architectural plans

we altered to suit ourselves. We decided that Capetown had piped the tune too long, and we moved the capital to suit ourselves, so that the 'centre of the world' was moved from the South. In a like manner as it should be moved from Melbourne.

"Australia is the New England of the world. There is a possibility that the centre of the world may pass from the dear old Motherland. The next few years will be the most momentous in the history of our race.

"Before the war I felt that there would be an effort by a younger country to oust us from our pride of place. This has not yet occurred. The banking centre of the world has not yet passed from London. In shipping, too, we have retained our pre-eminence.

"You should make your country a replica of all that is best in the old land, and carry on the traditions of the people. The grey old city of the north will find its duplicate in the south. If the old country should be weakened it will find a sturdy young counterpart in the south.

"Yours is the task to reproduce the beautiful parts of dear old London under suitable conditions in the south. The task is yours, gentlemen. You will achieve a very great city in this very great land. I shall look with interest to your progress as a corporate body in New South Wales. You have the opportunity, the ability and the brains—the brains that will make in this country the old city in the new land." (Applause.)

Mr. G. H. Godsell replied as follows:—"Your Excellency and gentlemen, on behalf of the Institute of Architects of New South Wales I thank your Excellency for your kind congratulations on the attainment of Registration, for which the Institute has so long striven, and for all the good things you have predicted for our future welfare, and I thank every visitor present for the manner in which the toast has been received.

"As I mentioned before to-night, the last time we had the honour of entertaining the King's representative was in 1913, and in that year the Members of the Institute numbered 138. Since then the membership has increased, in 1919 the Institute numbered 149, and to-day 252. Looking back to 1913 the two chief aims and objects of the Institute were a 'Chair' of Architecture at the University' and 'Registration.'

"To-day we have both, and more than that, for I am proud to say that we have obtained some of the principal objects which I outlined in my

Address before the Institute in April last. Firstly, as I have before said, *Registration*, also *New Building Ordinances* and *New Quarters for the Institute*, where our work can grow and expand and where our city and country members can meet together in congenial surroundings.

"I am indeed glad to see such a distinguished gathering of visitors here to-night to meet your Excellency. No institution can progress without close association with those citizens with whom its members come into daily contact and if Architecture is to mean all it should do to the public generally we must obtain the sympathy and respect of the community in our endeavour to raise the standard of our profession to the highest level. As your Excellency is doubtless aware this Institute holds its Charter direct from the Royal Institute of British Architects, and is now the examining body of this State for the Diplomas conferred by the Royal Institute and it therefore behoves us to live up to a high standard of efficiency, and, apart from educating our members, to educate our public and thus make this great city a treasure house of our Art.

"Now, having mentioned some of the good things which we have recently attained, I must point out one grave disability under which we are labouring, it is that so much public work in connection with our profession is carried out by the Government, and the architect in private practice is thus robbed of the opportunity of designing a public building. Surely every man present can picture the pride with which an Australian architect would point to a national building of his own creation. To-day we have a Faculty of Architecture at the University and the Institute of Architects working hand in hand for the education, examination, and assistance of the student in Architecture, and in this city to-day a whole crop of young men who are capable of great things if given the opportunity. There are clever men in both the State and Commonwealth Departments, but, nevertheless, you can't obtain the best results from 'factory architecture.' A draftsman who draws plans from red tape instructions for sites he has never seen and in localities of which he is ignorant is naturally at a great disadvantage and it's only by chance that the building designed under such conditions will suit the surroundings, and therefore the Institute begs his Majesty's Ministers to seriously consider private practitioners in connection with public buildings. The Faculty of Architecture and the Institute of Architects place their united services at the disposal

of the State Government to draw the conditions and conduct competitions for such work and I venture to say that given a fair trial the result would be crowned with success, and in support of this I would like to point out that the Public Monuments Advisory Board, which was one of the good works of the present Minister for Education, and is composed of representative men in Art and Architecture, has not only saved this State from many unsuitable memorials but has substituted, for what otherwise would have been terrible failures, many fine works of art which will be the pride of the districts in which they are erected for all time. Now the work of this Board will soon be completed and I therefore suggest that if this Board were reformed to assist the Government in promoting the object in view as an 'Honorary Civic Advisory Board of Experts' the success of the future of Architecture in this State would be assured. This, gentlemen, must be our next objective, for which we must work as we worked for 'Registration,' and I am sure that knowing, as His Majesty's Ministers know, that our sole object is 'the welfare of our State,' that our earnest request will receive favourable consideration. Your Excellency and gentlemen, I thank you for the manner in which you have honoured the toast."

In proposing the health of *The Visitors*, Professor Wilkinson stated that though they might dream dreams about Sydney these could only come true if they captured the imagination of the leaders of industry. It was most unfortunate that some people did not understand what architecture could do for industry. They would endeavour to prove their point that they could be of great assistance to business, and they wanted in return the hard-headed man to give the architectural worker true appreciation.

"We have watched the progress of your work in connection with the Registration of Architects with great interest," said Mr. J. P. Tivey, Honorary Treasurer of the Engineering Institute of Australia, in responding to Professor Wilkinson's toast. Continuing, he said, "We are very gratified that you have got your Act through Parliament. We hope to follow in your footsteps. You have shown us the way. We hope before long that you will be able to congratulate us on the success of our efforts to do a most important thing for professional men. You must not forget that we are not only inhabitants of New South Wales or Sydney, we are also Australians. (Applause.) You work in close co-operation with the architects of other States, but

after all we are all only part of the whole. It is a crying shame that there is no provision in the Federal Constitution for the work of any scientific body as a Federal institution. At present we can only be embodied under the laws of one State and registered in the others. We must change this to get a broader view on the work of our several professions.

"Speaking as an engineer, with our common aims and common ideals, I feel that we can work together for our common objects, along the lines I have outlined to you to-night."

Mr. G. Sydney Jones proposed the health of *Kindred Societies*, the Institution of Engineers, the Institution of Surveyors, the Chamber of Commerce, and the Master Builders' Association. He said that the Engineers utilised the forces of nature for the service of man. The Architects were glad to be associated with them, although the Engineers did sometimes attempt to trespass upon the Architect's domain. They were, however, welcome trespassers, because the time was coming when Architects must be Engineers and Engineers must be Architects. With regard to the Surveyors, accuracy was the soul of their work, and without accuracy Architects' clients might lose thousands of pounds of money. Architects were closely associated with Surveyors in the matter of town-planning, the objective of that science being the better planning of towns new and old in the interests of the public. It was the privilege of the Architects to be associated with the Chamber of Commerce in solving the problems of modern buildings in warehouse, factory and other construction. Greater appreciation by the Chamber of the value of good Architecture would be desirable, which, in the older countries of the world and in America, is recognised as a commercial as well as a national asset. The Master Builders were men of great substance, financial heavyweights in the building world, who associate themselves with Architects, most of whom were featherweights. Though the heavyweights and the featherweights often had a round or two it was rare for either to win because they were fair-minded men, and after their rounds were over they shook hands and worked together as before in the best of goodfellowship. Mr. Sydney Jones also referred in friendly terms to the Royal Art Society and the Society of Artists.

The health of *The Chairman* was proposed by Mr. E. H. Buchanan, President of the Master Builders' Association.

The gathering broke up at a late hour after a thoroughly enjoyable evening, which will be long remembered by the members of the Institute.

COMPETITIONS FOR YOUNG AND OLD

Sydney, 12th December, 1921.
(To the Editor.)

Dear Sir,—

In your issue of November 15th Mr. Barr takes me to task in connection with the conditions of competition for the Rockhampton War Memorial. Permit me to give the facts. The local committee had prepared a set of conditions which they forwarded, asked me to act as sole adjudicator and offered to pay me a fee. I refused the fee (as I always do in connection with War Memorials), but pointed out that the stipulated cost would not cover an *adequate* arched treatment, and suggested leaving the whole matter of design open to the competitors. The Committee insisted on the arch, and as some kind of arch could, without doubt, be erected for the money I had to content myself with the addition of the clause "or some other architectural feature." Many arched designs were submitted and some could have been carried out for the money, but they were not of sufficient merit to warrant consideration, or failed to provide proper space for the 7000 names required. In order to be quite fair as to outlay, I obtained the services of a well-known quantity surveyor and before awarding the premiums, went carefully into the cost of all the designs

that were in the running, including several arches, with the result that the arched designs were necessarily excluded. Mr. Barr was, I believe, one of the competitors who sent in an arched design. I sympathise with his disappointment, but I must demur to his statement that I made a slip.

Allow me, however, to congratulate Mr. Barr on his very excellent paper. He puts his points so clearly and so racily that it is quite a pleasure to read it and my only regret is that I was not able to be present. I am heartily with him as to the waste of labour in preparing elaborate drawings, and if the Institute can see its way to define what is absolutely necessary to make a design understandable by a competent assessor, and taboo any frills, it would be rendering a great service to the profession, and also to the public, who are so often misled by elaborate drawings. May I also give a word of advice to competitors, and that is to be sure they are within the limits of cost. Only last week I was judging a competition, and not one design of those worthy of consideration complied with this condition.

Yours faithfully,

JOHN SULMAN.

INSTITUTE LIBRARY

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1. If a book is lost or stolen from a borrower, or if the same is not returned by him within fourteen days, from the date of issue, he shall replace it, or pay to the Council the full value of such book. In case of the book being part of a set or series, and the borrower neglecting to return the same within fourteen days as aforesaid, or being unable to replace the same, in consequence of its having been lost or stolen, he shall pay to the Council the full value of the whole set or series.

2. A borrower shall keep the books borrowed by him from the Library clean and in good condition, and shall not tear, nor turn down the leaves, nor mark, nor deface, damage, or injure the book in any way.

3. If a book is torn, damaged, marked, defaced, or injured while lent to a borrower, such borrower shall, within one week of notification from the Council, replace the book, or pay to the Council the

full value of the book; or, in case it is part of a set or series, and he shall not replace the said book, the full value of the whole set or series.

In cases where the book is replaced the borrower shall be entitled to the injured book.

4. A borrower shall be entitled to borrow only one book at a time, but at the discretion of the Council two volumes of one work may be issued at the same time.

5. A borrower shall return any book borrowed at the latest within fourteen days after the date of issue; but books may be renewed upon application at the discretion of the Council.

6. If a book is not returned within the time prescribed by the preceding rule, the borrower shall pay the sum of sixpence for each and every day the book is retained beyond the prescribed time.

7. Certain volumes may not be removed from the Library, and are for reference only.

The following is a catalogue of books in the Institute Library. Reference can be made to same on application to the Secretary.

31. Greek Architecture—Brown, E. A.
92. Classic Architecture, folio plates—Mitchell, C. F.
101. Rome—Taylor, G. L., and Cresy, E.
108. The Architecture of Palladio.
32. Norman Architecture—Brown, E. A.
34. Gothic Architecture—Brown, E. A.
36. Abbey Church of St. Albans—Buckler, I. E., and C. A.
- 42-43. Memorials of Cambridge, 2 vols.—Le Keux.
- 47-50. The Antiquities of Scotland, 4 vols.
51. Abbeys of Teviotdale.
52. Details of Gothic Architecture—Colling, J. K.
- 53-55. Examples of Gothic Architecture, 3 vols.—Pugin, W.
- 56-57. Analysis of Gothic Architecture, 2 vols.—Brandon, R. and J. A.
- 67-69. The Ecclesiologist, 3 vols.
77. Paley's Gothic Moulding—Fawcett, W. M.
102. Worcester Cathedral—Wild.
91. Gothic Architectural Parallels—Sharpe.
99. Views of Houghton.
110. Mansions of England in the Olden Times—Nash, J.
106. Architectural Remains of the Reigns of Elizabeth and James.
- 35-36. Public Buildings of London, 2 vols.—Pugin and Britten.
- 38-39. Churches of London, 2 vols.—Godwin and Britten.
93. Plans, Elevations and Sections of Buildings—Soane, J.
100. The Works of Inigo Jones—Triggs, H. E., and Tanner, H.
- 96-97. Later Renaissance Architecture in England, 2 folios—Belcher, F., and McCartney, M. E.
95. English Interior Woodwork—Tanner, H.
21. The Art of the Plasterer—Bankart, G. P.
- The Decoration and Furnishing of Town Houses—Edis, R.
46. The Art and Craft of Garden Making—Mawson, T. J.
89. Detail and Ornament of the Italian Renaissance—Oakshot, G. J.
- 85-88. Die Renaissance in Italy, 4 folios—Schutz, A.
- Architectural Styles—Rosengarten, A.
73. The Story of Architecture—Waterhouse, P.
79. History of Architecture—Fletcher, B. F.
90. Architecture—Juone.
70. Palaces of Nineveh and Persepolis—Ferguson, J.
83. History of Ancient Architecture—Ferguson, J.
82. History of Modern Architecture—Ferguson, J.
84. History of Medieval Architecture—Ferguson, J.

33. History of the Gothic Revival—Eastlake, C.
38. Rickman's Gothic Architecture—Parker, J. H.
44. Gothic Architecture in England—Bond, F.
71. History of Architecture (Gothic and Renaissance)—Smith & Poynter.
75. Concise Glossary of Architecture—Parker, J. H.
76. Introduction to the Study of Gothic Architecture—Parker, J. H.
- 26-27. History of Renaissance Architecture in England, 2 vols.—Blomfield, R.
28. Early Renaissance Architecture in England—Gotch, J. A.
41. Gwilt's Encyclopedia of Architecture—Papworth, D. W.
- 58-67. Dictionnaire Raisonne de l'Architecture Francais—Viollet-le-Duc, M. E.
105. Plans of Sydney—Done, H. P.
105. Who's Who in Architecture.
1. Strength and Elasticity of Australian Timbers—Warren, W. H.
7. Building Materials—Middleton, G. A. T.
- 22-25. Modern Buildings, 4 vols.—Middleton, G. A. T.
- 15-16. Building Construction, 2 vols.—Mitchel, C. F.
20. Modern Practical Joinery—Ellis, G.
12. Shoring and Underpinning—Hadder-Stock, C.
18. Specification in Detail—Macey, F. W.
- Australian Building Practice—Nangle, J.
13. Practical Science for Plumbers and Engineers—Wright-Clarke, J.
17. The Plumber and Sanitary Houses—Hellyer, S. S.
19. Sanitary Engineering—Moore, E. C. S.
6. Australian Building Estimator—Jefferies, W.
- Builder's Price Book, 1910—Lockwood.
- Redress by Arbitration—Foulkes-Lynch, H.
107. Sterography, A Complete Body of Perspective—Hamilton, F.
10. Acoustics of Public Buildings—Smith, T. R.
- 5-9. Principles of Plane Geometry and Projection, 2 vols.—Angell, H.
2. Principles of Architectural Perspective—Middleton, G. A. T.
11. The Elementary Principles of Graphic Statics—Hardy, E.
45. Architectural Drawing—Spiers, R. P.

The following Periodicals and Journals are also available:—

Journal of Proceedings of the Royal Institute of British Architects.

Journal of Proceedings of the American Institute of Architects.

Journal of Proceedings of the Architectural Association, London.

Journal of Proceedings of the Natal & Transvaal Institutes of Architects.

Journal of Proceedings of the Japanese Institute of Architects.

The British Builder.

From the collection of the late Arthur Pritchard, Esq.

These Books have the Imprint.

Masonry, Bricklaying and Plastering Burn
How to Estimate Rea
Specifications in Detail Macey
Building Specifications Leaming
Old Cottages and Farm Houses .. Davie & Dauber
Commonsense Homes Sills
Treatise on Architecture Ashpitel
Book of Country Houses Newton
Architectural Parallels Sharpe
Book of Houses Newton
Architectural Iron and Steel Birkmire
Law of Fire Insurance Colenso
School Architecture Robson
Principles of Planning Marks
High Office Buildings Birkmire

These Books are without the Imprint.

Architectural Examples in Brick, Stone, Wood and Iron.
Engineers' Standard Catalogues, 1919-1922—
Engines and Boilers.
Pumps, Machinery and Plant.
Sanitation, Heating Construction.
Electrical.
British Standard Exporter, 1919-1921—Hardware, Earthenware, Leather.
British Standard Exporter, 1920-1921—Furniture, Music, etc.
Municipal Engineers' Specification.
Colonial Compendium and Export Catalogue, 1920.
Colonial Compendium and Export Catalogue, 1921.

SCHEDULE OF WAGES AS PER AWARDS AND AGREEMENTS AND THE 44 HOUR PROCLAMATION

Trade	Hours.	Rate per hr.	Date from which rate takes effect.
Painters	44	2/4 ³ / ₈	May 2, 1921.
Bricklayers	44	2/7 ¹ / ₂	"
Plasterers	44	2/7 ¹ / ₈	"
Plumbers	44	2/6	Nov. 4, 1921.
Stone Polishers	44	2/3	May 2, 1921.
Stonemasons (cutters)	40	2/9 ³ / ₄	"
Stonemasons (setters)	44	2/9 ³ / ₄	"
Quarrymen	40	2/8 ¹ / ₄	"
Carpenters	44	2/6	August 12, 1921.
Slaters	44	2/7 ¹ / ₂	May 2, 1921.
Tilelayers	44	2/4	"
Builders' Labourers	44	2/3 ¹ / ₄	(As regards pay April 1, 1921.)
Pick and Shovel Men (State Award)	44	2/2 ¹ / ₄	(As regards hours May 2, 1921.)
Builders' Labourers	44	2/3 ¹ / ₄	(As regards pay March 1, 1921.)
(Members of B.L. Federation Award)	under Federal		(As regards hours April 1, 1921.)
Electrical Mechanics	44	2/4 ¹ / ₄	May 22, 1921.
Railway, Road, Bridge, etc. Labourers	48	1/11 ⁵ / ₈	and upwards Nov. 15, 1920.
Crane Drivers	44	2/9	June 5, 1921.
Hoist Drivers	44	2/6	June 5, 1921.
Builders' Carters		£4/7/6	(per week) Dec. 23, 1921.
Machinists (Gen. Joiners)		£5/7/-	" " (44 hrs.) Oct. 28, 1921.
Machinists' Labourers		£4/12/-	" " (44 hrs.) "
Bridge and Wharf Carpenters		2/7 ¹ / ₂	.. August 12, 1921.

Note.—The new rates for Electrical Mechanics and for Railway, Road, etc., Construction Labourers are not gazetted at the time of writing but are expected to come into force on December 30.

Price of Materials.

Bricks (Common)—At Kiln, per 1000 ... 68/-
Cartage of bricks to site (as per current rates).
Timber (Basic Prices).—
Hardwood, per 100ft. sup. ... 36/-
Oregon 40/6
Redwood 80/-

New Zealand White Pine and Rimu

(6in. wide) 58/6
Richmond River or Hoop Pine 58/6
Cement—Per three bags (according to
quan.) 20/- to 22/6
The above prices, with the exception of bricks, are
for city delivery.

STUDENTS' DESIGNING CLUB

Subject for No. 6 Competition (Final).

A Convalescent Home for 50 men workers, on a hilly site, overlooking an industrial city.

Accommodation to include: Club room, lounge, writing room, and common dining room, necessary bedrooms, kitchen and offices, and accommodation for staff.

Drawings to be $\frac{1}{8}$ in. scale, and to comprise plan of each floor, two sections, and two elevations, and to be sent to the Secretary of the Institute of Architects, 5 Elizabeth Street, Sydney, endorsed "Students' Designing Club."

Closing date, February 28th, 1922.

Rules Governing Competitions.

1. Competitions will be held every two months, six in the year, commencing November 1st, and are open to all members of the profession not actually in practice, who have had at least three years of connected study, and whose age shall not exceed thirty years. Prizes totalling £25 will be given—

First Price	£15 0 0
Second Price	£7 10 0
Third Price	£2 10 0

These prizes will be awarded to competitors gaining most points during the year's sessions. Marks will be awarded for every design submitted, and the prizes will be given at the end of the session to the competitors gaining the three highest totals. Members need not enter for every competition.

2. Subjects and all correspondence will be published in the Institute Journal.

Draughtsmanship will be considered in assessing.

3. Drawings must be drawn on one sheet of white paper unmounted; the actual size 30 inches by 22 inches, and must be in ink, with no colour or wash on plans or elevations.

Scale and drawings required will be specified with each subject.

4. Designs to be sent to the Secretary of the Institute of Architects, 5 Elizabeth Street, Sydney, on dates specified, with each subject endorsed "Students' Designing Club."

5. The winning designs will be published in the Institute Journal, together with a criticism of all submitted.

6. Competitors, on entering, which can be done at any time during the session, must send in their names and addresses in a sealed envelope with *nom de plume* to be adopted for the session typed on the outside.

Envelopes will be opened by the President of the Institute at the completion of the session.

Before the prizes are awarded, declarations must be made by the winning competitors that the designs submitted by them have been entirely their own work.

7. All designs will be returned to competitors on demand at the expiration of the session, but the Institute accepts no responsibility for any loss or damage to same. The expense of return shall be borne by the competitors.

8. The assessing of designs will be in the hands of Prof. Leslie Wilkinson, F.I.A., F.R.I.B.A., of the University of Sydney, Messrs. B. Hadley, F.I.A., of the Technical College, Sydney, B. J. Waterhouse, F.I.A., F. Glynn Gilling, F.I.A., and J. D. Moore, A.I.A., A.R.I.B.A.

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
Auckland Citizens' War Memorial	30/5/22	Approved
Hurstville Town Hall Memorial	20/1/22	Disapproved.
N. S. War Memorial	—	Under consideration.

INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

MINUTES OF A GENERAL MEETING

Held at the Royal Society's Hall, 5 Elizabeth Street, Sydney, on Tuesday, November 8, 1921, at 8 p.m.

Mr. B. J. Waterhouse (Vice-President) occupied the chair in the absence of Mr. G. H. Godsell (President), who was in Melbourne, and there were also present Professor Leslie Wilkinson, Mrs. Taylor, Messrs. G. Sydney Jones, G. L. Grant, R. Keith Harris, R. M. Mathers, R. G. Craig, D. T. Morrow, P. E. Ranclaud, J. D. Moore, S. M. Mould, F. P. Ryan and N. L. Jones.

The minutes of meeting of 22nd November were taken as read and confirmed.

A ballot was taken for the election of Messrs. W. J. Monks and H. J. Wagstaff as Fellows, and for Mr. G. P. Baxter as Associate. Seventy-six votes were cast. Messrs. R. Keith Harris and J. D. Moore acted as scrutineers, and the three candidates were declared duly elected.

INSTITUTE OF ARCHITECTS' ANNUAL EXHIBITION

PARTICULARS AND CONDITIONS

An Exhibition is to be held in the Art Exhibition Room of the Education Building, Sydney, from Thursday, 30th March, to Wednesday, 12th April, 1922, both days inclusive.

The Exhibition will be opened on Thursday, 30th March, at 3 p.m.

There will be no charge for admission.

Conditions.

1. Any Architect, Painter, Sculptor, Designer in Applied Arts, or Student in Architecture, may submit exhibits.

2. Exhibits are limited to work not previously exhibited in Sydney.

3. There will be an entrance fee of 2s. 6d., and same must be sent with each exhibit. Half the entrance fee will be retained in case of rejected exhibits. Students' work will be admitted free.

Sections.

1. Designs for public and commercial buildings.

1a. Designs for warehouse buildings.

2. Domestic work.

3. Ecclesiastical work.

4. War memorials.

5. Sketches of architectural subjects (any medium).

6. Designs or examples of furniture, stained glass, wallpapers, metal work, or other applied arts.

7. Sculpture, wood carving, modelling, metal work.

8. Measured drawings and drawings of buildings of historical importance.

8a. Students' work.

9. Constructional details.

10. Designs, the motif of which is the use of flora or fauna.

11. Mural decoration.

12. Town planning, lay-out schemes of gardens, etc.

Note.—The above exhibits will include scale drawing and models, details, perspectives, photo-

graphs, etc., connected with such work. Explanatory plans should accompany elevations and perspectives wherever practicable.

General Conditions.

1. The Hanging Committee reserves the right to reject any work submitted.

2. Every work submitted must be signed. On the back of each exhibit must be pasted a label stating:—

(1) The section for which it is intended.

(2) The title.

(3) Name and address of exhibitor.

The above information must be repeated for the purpose of cataloguing on a tie-on label to hang over the front of the exhibit.

3. No copy of any kind will be admitted, except in students' work. Measured drawings must be from actual measurements by the exhibitor, and original sketches may be suitably attached.

4. All drawings must be suitably mounted on stretchers, or other stiff material (frames preferred), and all to be subject to the approval of the Hanging Committee.

5. All rejected exhibits must be removed by the exhibitors within three days from notification of non-acceptance.

6. All exhibits must be removed by the exhibitors within three days after the close of the Exhibition. Country exhibits will be returned, provided that postage be sent to defray cost of same.

7. All drawings intended for exhibition must be delivered at the Exhibition Room, Education Building, Sydney, on or before Tuesday, 21st March. Delivery to be made during departmental hours.

8. Every care will be taken of the exhibits, but the Institute will not be responsible for any loss or damage to same.

All communications must be addressed to Mr. H. C. Day, Hon. Secretary of the Exhibition Committee, c/o. Institute of Architects, 5 Elizabeth Street, Sydney.

ARCHITECTS ACT 1921

ACT No. 8, 1921.

An Act to provide for the registration and to regulate the practice of architects; and for purposes connected therewith. [Assented to 28th November, 1921.]

PART I.

Preliminary.

1. This Act may be cited as the "*Architects Act, 1921*," and shall come into force on a date to be proclaimed by the Governor in the Gazette.

2. This Act is divided into Parts as follows:—

PART I.—*Preliminary*—ss. 1-3.

PART II.—*The Board*—ss. 4-8.

PART III.—*Register*—ss. 9-11.

PART IV.—*Architects*—ss. 12-20.

PART V.—*Miscellaneous*—ss. 21-25.

3. In this Act, except where the context or subject-matter otherwise indicates or requires,—

"Architect" means a person registered as an architect in accordance with this Act.

"Architect" or "architecture" does not include naval architect or naval architecture.

"Board" means the Board of Architects of New South Wales established by this Act.

"Member" means member of the board.

"Minister" means Minister of the Crown entrusted with the administration of this Act.

"Person" includes corporation, company, society, association, and firm.

"Practise" and similar expressions, in relation to architecture, refer to practising architecture as a principal for fee or reward, or as an officer of the Public Service of New South Wales or of the Commonwealth, or as an employee of any statutory authority constituted for public purposes.

"Prescribed" means prescribed by this Act or regulation thereunder.

"Registrar" means registrar of the board.

PART II.

The Board.

4. (1) A board, to be called the "Board of Architects of New South Wales," is hereby established.

(2) The board shall be a body corporate with perpetual succession and a common seal, and may sue and be sued in its corporate name.

5. (1) The members of the first board shall be

the head of the Faculty of Architecture in the University of Sydney, the President of the Institute of Architects of New South Wales, the President of the Architects Association of New South Wales, the Lecturer in charge of the Department of Architecture at the Sydney Technical College, and four other persons appointed by the Governor.

(2) The members of the first board shall hold office for three years and thereafter the board shall consist of eight members. Two of such members shall be appointed by the Governor; two of such members shall be architects in practice who shall be elected in the manner prescribed; the head of the Faculty of Architecture in the University of Sydney, the President of the Institute of Architects of New South Wales, the President of the Architects' Association of New South Wales, and the Lecturer in charge of the Department of Architecture at the Sydney Technical College, shall be, *ex officio*, the other four members.

(3) One of the members shall be elected by the members as president of the board.

(4) If the said institute and the said association combine in one body the president and vice-president of that body shall be *ex officio* members of the board in substitution for the presidents of the said institute and the said association.

6. (1) The members other than *ex officio* members, shall hold office for a term of three years, but shall be eligible for reappointment or re-election, as the case may be.

The Governor for sufficient cause may remove any member.

(2) If the office of a member becomes vacant during the term for which he is appointed or elected, a deputy shall be appointed or elected for the remainder of such term.

(3) If a member is likely from any cause to be absent from meetings of the board for more than three months, the Governor may appoint a deputy to act for such member during his absence.

(4) A deputy shall have the same powers, rights, and duties as the member in whose place he is appointed or elected.

(5) Each member shall be paid a fee of one guinea for each meeting of the board which he attends, provided that the fees paid to any member during any year shall not exceed twenty-five guineas.

7. (1) The office of a member shall become vacant if such member—

- (a) becomes bankrupt or compounds with his creditors; or
- (b) is absent without leave of the board from three consecutive meetings of which due notice has been given to him either personally or by post; or
- (c) resigns his office by writing under his own hand addressed to the Governor; or
- (d) is removed from office by the Governor.

(2) The validity of any act or resolution of the board shall not be affected by any informality or irregularity in its constitution, and the fact that the office of any or every member is vacant shall not of itself operate to dissolve the corporation.

8. (1) The Governor may from time to time, in accordance with the Public Service Act, 1902, or any Act amending the same, appoint a registrar and such other officers as the Governor may think fit for carrying out the provisions of this Act, and may at any time remove any persons so appointed.

(2) The fees of members and the salaries and emoluments of the officers so appointed as aforesaid, and all other expenses of and incidental to the administration of this Act, shall when approved by the Minister, be paid without further appropriation out of the Consolidated Revenue Fund.

PART III.

Register.

9. (1) There shall be a register of architects to be kept as prescribed.

(2) On payment of the prescribed fee, the registrar shall enter in the register—

- (a) the full name and address of all persons registered as architects;
- (b) the date and description of the qualification in respect of which such registration is granted;
- (c) such other particulars as may be prescribed.

10. (1) The registrar shall in the month of January in each year transmit a copy of the register certified to be correct up to the thirty-first day of December of the preceding year to the Minister, who shall thereupon cause the same to be published in the Gazette as the "Architects Roll of New South Wales for the year _____," followed by the number of the year in which it is published.

(2) A copy of the Gazette shall be *prima facie* evidence in all legal proceedings that the persons mentioned in the roll, and no others, are registered as architects for the year in question.

11. (1) Every architect shall before or in the

month of July in each year pay to the registrar the prescribed roll fee.

(2) If any architect does not pay the prescribed roll fee before or in the month of July in any year the board may remove his name from the register.

(3) If the name of any architect is removed from the register under this section the board may restore his name to the register upon payment of the prescribed fee.

PART IV.

Architects.

12. No person shall be entitled to be registered as an architect unless he has attained the age of twenty-one years and satisfies the board that he is of good fame and character.

13. (1) Subject to the provisions of this Act, a person shall be entitled to be registered as an architect who—

- (a) has passed the prescribed examination; or
- (b) holds a prescribed degree, diploma, or license of competency from the University of Sydney or the Sydney Technical College; or
- (c) holds a prescribed degree, diploma, or license of competency from some university, institute, college, or school outside New South Wales approved of by the board, and also either passes the prescribed examination or shows to the satisfaction of the board that in the country or State where such degree, diploma, or license was issued persons registered as architects under this Act are entitled to practise architecture by virtue of such registration and without further examination; or
- (d) holds a degree, diploma, or license of competency from some architectural college, school, or public institution in a British possession, or in some foreign country approved of by the board, and also satisfies the board that he possesses the requisite knowledge and skill for the practice of architecture; or
- (e) has, prior to the commencement of this Act, completed a term of not less than five years as an articled pupil or assistant to a practising architect in New South Wales, or, has prior to the first day of November, one thousand nine hundred and twenty-one, practised as an architect in New South Wales as his sole or main source of livelihood; or

(f) satisfies the board that he is engaged in the acquirement of professional knowledge in architecture and passes within three years of the commencement of this Act the prescribed examination; or

(g) satisfies the board that, during four years preceding the commencement of this Act, he has been a competent teacher of architecture.

(2) No person shall be entitled to be registered under the provisions of paragraphs (d) (e) (f) or (g) of subsection one of this section unless he applies to the board to have his name recorded as a person entitled to the benefit of this section within six months from the commencement of this Act:

Provided that the board, if satisfied that for some sufficient reason such person was unable to make such application within the said six months, may permit such application to be made at a later date.

(3) Notwithstanding any other provision of this section, all absences on active military or naval service by a British subject shall be accounted as part of the periods mentioned in this section, and shall be excluded from the period prescribed for the passing of any examination.

14. Application to the board for registration shall:

- (a) be made as prescribed;
- (b) be supported by such evidence as the board may require; and
- (c) be accompanied by the prescribed fee.

15. The board may issue certificates of registration as prescribed.

16. If the application of any person to be registered as an architect is refused by the board upon any ground other than the ground that he has not passed the prescribed examination, such person shall have the right of appeal to a court of petty sessions or to a district court, and such appeal shall be in the nature of a rehearing, and the decision of the court shall be final, and the board shall give effect thereto.

17. (1) The board may remove from the register the name of any person who—

- (a) has died; or
- (b) does not possess the qualifications in respect of which he was registered; or
- (c) is convicted of any felony or misdemeanour or of any offence which if committed within this State would be a felony or misdemeanour; or
- (d) is guilty of a breach of subsection two of section nineteen of this Act.

(2) Any such person shall not have his name removed from the register—

(a) until he has been called upon by the board to explain any objection raised against him; or

(b) on account of a conviction for an offence which, though within the provisions of this section, does not, either from the trivial nature of the offence or from the circumstances under which it was committed, render it expedient in the public interest that he should be debarred from practising architecture.

(3) In the case of the removal of any person's name from the register he shall have the right of an appeal to a court of petty sessions or a district court: such appeal shall be in the nature of a rehearing, and the decision of the court shall be final and the board shall give effect thereto.

18. (1) Where the board removes the name of any person from the register, the name of that person shall not be again entered on the register except by direction of the board or by order of a court of competent jurisdiction.

(2) The board may, if it thinks fit in any case, restore to the register any name removed therefrom without payment of fee or on payment of such fee, not exceeding the registration fee, as the board may direct.

19. (1) No person shall use or publish in connection with architecture, or the practice of architecture, any title, name, words, or letters which indicate that he is qualified or entitled to registration as an architect other than such title, name, words, or letters as truly indicate a qualification which he in fact holds.

(2) An architect shall not accept any commission or substantial service or favour from any person who has contracted to execute or is engaged in the execution of any work in connection with any building designed or supervised by such architect, or from any person who has offered or agreed to supply any materials, fittings, or appliances to be used in or in connection with such building.

(3) No person other than an architect or a person practising architecture as an officer of the Public Service of New South Wales or of the Commonwealth or as an employee of any statutory authority constituted for public purposes shall take or use the name "architect," or any abbreviation thereof, either alone or in connection with any other name, title, or business:

Provided that nothing in this subsection shall

prohibit a person practising naval architecture from using the name "naval architect."

(4) Any person who commits a breach of any of the provisions of this section shall be liable for each offence to a penalty not exceeding twenty pounds, and where the breach is a breach of subsection two of this section he shall also be liable to have his name removed from the register.

20. Notwithstanding any other provision of this Act, upon the death of an architect the board may permit his name to remain upon the register, and may authorise his executor, administrator or trustee to carry on in the name of the deceased architect the practice formerly carried on by him provided that the practice shall be carried on under the personal superintendence of an architect whose name shall be registered as superintendent of the practice.

PART V.

Miscellaneous.

21. (1) The board may, for the purposes of this Act, examine any person on oath or take a statutory declaration from any person.

(2) If any such person wilfully makes any false statement, or declaration, or utters or attempts to utter or put off as true before the board any false, forged or counterfeit certificate, diploma, license, letter, testimonial, or other document, he shall be liable to imprisonment, with or without hard labour, for any period not exceeding twelve months.

22. (1) The president of the board, or by consent of the majority of the members present at any meeting of the board, a member may in writing under his hand summon any person to attend before the board for the purpose of being examined with respect to any matter within the jurisdiction of the board.

(2) Every person duly summoned as aforesaid who does not attend after reasonable expenses have been paid or tendered to him, or refuses to be sworn or to make a statutory declaration, or to answer any lawful question, shall be liable to a penalty not exceeding twenty pounds.

23. Any person who wilfully makes or causes to be made any false entry in or falsification of the register, and any person who wilfully procures or attempts to procure himself or any other person to be registered under this Act by making or producing, or causing to be made or produced any false or fraudulent representation or declaration either verbally or in writing, and any person aiding

or assisting therein shall be liable to imprisonment with or without hard labour for a term not exceeding twelve months.

24. (1) The fees payable and all penalties recovered under this Act or any regulation made thereunder shall be paid to the registrar.

(2) The amount of such fees and penalties shall be paid by the registrar into the Treasury, and carried to the Consolidated Revenue Fund.

(3) The board shall, as soon as practicable after the thirtieth day of June in each year, publish in the Gazette a statement made up to that date, showing the receipts and expenditure of the board during the preceding year, certified as correct by the Auditor-General.

25. (1) The Governor, upon the recommendation of the board, may make regulations for carrying out the provisions of this Act, and in particular for—

- (a) regulating the appointment and election of members, and the proceedings of the board, and fixing the quorum of the board;
- (b) regulating the duties of officers;
- (c) prescribing what degrees, diplomas, licenses, certificates, or other documents shall be recognised by the board;
- (d) providing for the appointment of examiners and regulating the holding of examinations and prescribing the subjects of and fees for such examinations;
- (e) prescribing fees payable under this Act.

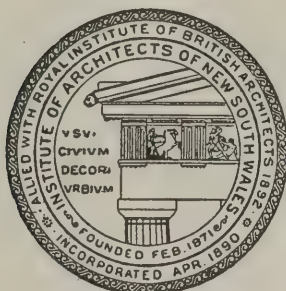
(2) Such regulations may prescribe a penalty not exceeding twenty pounds for any breach thereof.

(3) Such regulations shall—

- (a) be published in the Gazette;
- (b) take effect from the date of publication or from a later date to be specified in such regulations; and
- (c) be laid before both Houses of Parliament within fourteen sitting days after publication if Parliament is in session, and if not, then within fourteen sitting days after the commencement of the next session. If either House of Parliament passes a resolution disallowing any regulation, or part thereof, such regulation or part shall thereupon cease to have effect: Provided that notice of such resolution has been given at any time within fifteen sitting days after such regulations have been laid before such House.

ARCHITECTURE

THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



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INSTITUTE OF ARCHITECTS' ANNUAL EXHIBITION

PARTICULARS AND CONDITIONS

An Exhibition is to be held in the Art Exhibition Room of the Education Building, Sydney, from Thursday, 30th March, to Wednesday, 12th April, 1922, both days inclusive.

The Exhibition will be opened on Thursday, 30th March, at 3 p.m.

There will be no charge for admission.

Conditions.

1. Any Architect, Painter, Sculptor, Designer in Applied Arts, or Student in Architecture, may submit exhibits.

2. Exhibits are limited to work not previously exhibited in Sydney.

3. There will be an entrance fee of 2s. 6d., and same must be sent with each exhibit. Half the entrance fee will be retained in case of rejected exhibits. Students' work will be admitted free.

Sections.

1. Designs for public and commercial buildings.
1a. Designs for warehouse buildings.

2. Domestic work.

3. Ecclesiastical work.

4. War memorials.

5. Sketches of architectural subjects (any medium).

6. Designs or examples of furniture, stained glass, wallpapers, metal work, or other applied arts.

7. Sculpture, wood carving, modelling, metal work.

8. Measured drawings and drawings of buildings of historical importance.

8a. Students' work.

9. Constructional details.

10. Designs, the motif of which is the use of flora or fauna.

11. Mural decoration.

12. Town planning, lay-out schemes of gardens, etc.

Note.—The above exhibits will include scale drawing and models, details, perspectives, photo-

graphs, etc., connected with such work. Explanatory plans should accompany elevations and perspectives wherever practicable.

General Conditions.

1. The Hanging Committee reserves the right to reject any work submitted.

2. Every work submitted must be signed. On the back of each exhibit must be pasted a label stating:—

(1) The section for which it is intended.

(2) The title.

(3) Name and address of exhibitor.

The above information must be repeated for the purpose of cataloguing on a tie-on label to hang over the front of the exhibit.

3. No copy of any kind will be admitted, except in students' work. Measured drawings must be from actual measurements by the exhibitor, and original sketches may be suitably attached.

4. All drawings must be suitably mounted on stretchers, or other stiff material (frames preferred), and all to be subject to the approval of the Hanging Committee.

5. All rejected exhibits must be removed by the exhibitors within three days from notification of non-acceptance.

6. All exhibits must be removed by the exhibitors within three days after the close of the Exhibition. Country exhibits will be returned, provided that postage be sent to defray cost of same.

7. All drawings intended for exhibition must be delivered at the Exhibition Room, Education Building, Sydney, on or before Tuesday, 21st March. Delivery to be made during departmental hours.

8. Every care will be taken of the exhibits, but the Institute will not be responsible for any loss or damage to same.

All communications must be addressed to Mr. H. C. Day, Hon. Secretary of the Exhibition Committee, c/o. Institute of Architects, 5 Elizabeth Street, Sydney.

SCHOOL PLAYGROUNDS

(Lecturette delivered before the Town Planning Association, 5th October, 1921, by Harvey Sutton, O.B.E., M.D., D.P.H., B.Sc.)

The subject of school playgrounds is primarily one of large centres of population. My own direct experience of Sydney is not yet sufficiently wide to permit me to deal adequately with local conditions. I propose, then, to give a brief summary of the problem from a more general point of view, and to outline not only the essential preventive method of town planning, but also to indicate more or less practicable methods available at the present moment for the partial cure or relief of existing conditions.

The importance of a full provision of playgrounds for children is not properly realised, so that it is necessary to point out the need of the occasion.

A study of the life history of the young human being shows the truth of the idea that the human climbs his ancestral and racial tree both in development inside the body and in his activities outside.

The play impulse is a characteristic of all young animals. The school of play is where they learn their powers of body and mind, whether in attack or defence. What is not appreciated is the length of time the human infant and child takes to pass through this stage. Whereas a kitten within a very few months may readily fend for itself, a child, on the other hand, before two years of age cannot protect itself against common dangers, fire or water, and even up to seven years of age, with a full supply of food and water to hand, would probably be quite unable to keep itself alive.

During these years play is its prime method of development.

On the physical side we find the tendency nowadays in physical training circles to hark back to play methods. As the result of the severe test of war experience, recreational games have largely replaced the Swedish exercises. The defence scheme now arranges that two-thirds instead of one-third of the time of the soldier in training is to be spent in recreational games, and only one-third on the old-time monotonous though useful physical jerks.

Interest and freedom—the natural attributes of play—are found invaluable and lessen fatigue in a remarkable fashion.

Our city conditions do not foster this play activity. Hence we find that the physical condition of the metropolitan children is very definitely less satisfac-

tory, whether we take height, weight or general physical development, than those in rural areas—a difference largely affected by opportunities for play. Rickets, which stunts growth and deforms the school child, is in mild degrees present in every school in overcrowded areas. While proper food and fresh air in bedrooms supply the essential material, the body develops itself by utilising the energy of those supplies in play.

Nor is the educational value of play limited to physical growth. The growth of the mind depends just as much on these activities. Games not only give strength and endurance and fleetness of foot, but also make the individual quick, alert and responsive. In contrast may be noted the interesting fact that a striking characteristic very often found in mentally deficient children is that they do not play with other children.

The human repeats racial experience in mental ways as well as physical. The young human being is a mere animal, and at an early age passes through the hunting period of the savage. "Chasing" and "hide and seek" exemplify this. Then comes warfare, the arts of offence and defence, which later is closely associated with the formation of gangs. Here is the first practical evidence of the social instinct.

In the city little or no consideration is given to the child, and playgrounds are few and far between. Thousands of our youngsters have no space to play in but the streets and gutters, where they dispute possession with the motor car and the policeman. Younger children are especially affected by the distance they would have to go to reach a playing space. If we repress the natural impulse to play two things occur. First, the ability to play is lost, and so it is found essential where playgrounds are established to have play leaders to organise games and teach the children how to play again. In the city child restriction makes play a lost art. And, secondly, the impulse will find an outlet, and then often in an anti-social direction. The reaction against unsatisfactory conditions makes the outlaw or gang of outlaws like Robin Hood, or his modern unsavoury representative the "push." Hence, instead of building up this most valuable instinct by co-operation and team methods into the true social

activities of public spirited citizens, we are creating delinquents by our failure to provide for the rightful needs of one-third of our population—the children from two to fourteen years of age. The vigorous boy must get rid of his energy. If he throws stones windows are smashed, and he ends up in the Children's Court. Too often the gangs or pushes are secret organisations who prey on society and steal, or use violence, or go in for unmentionable practices of very serious moment to the moral development of the community.

The younger child in the street comes too much into forced association with strange and undesirable adults who crowd around the garishly brilliant corner "pubs" of our street blocks, and from them he tends to learn by imitation vices such as cigarette smoking and foul language.

The playgrounds are, then, the safety valve of the child community and essential for their full physical, mental and moral development. Open a playground and, as has been shown in Chicago, delinquency for a radius of half a mile around is diminished one-third, though other conditions remain unaltered.

Surely the 300,000 children in Sydney deserve something more than a cramped, overcrowded life, and should expect space for freedom and self-expression and joy in life! While economic factors are the chief stumbling block, it does not justify the present system, which provides a large and costly department with staff, buildings, farm homes, etc., to remedy the delinquency and other conditions which a moderate expenditure in playing spaces would largely eliminate.

The real remedy for the problem is, as town planners have proved, the use of foresight and knowledge of civilised requirements, and the deliberate provision of adequate areas close to residential sites, such as is so ideally shown in your president's plan of a ring of parks, or else by dotting areas throughout the residential suburbs.

The minimum allotment should be at a distance of every two blocks or a quarter of a mile, a playground for small children of $2\frac{1}{2}$ acres; for older children and adults, as well as the younger children, at a distance of half a mile (four city blocks) of 10 acres. Wherever possible, and this is especially useful in inland cities and in summer, wading and swimming facilities be provided. The 10-acre ground should have a pool of the type designed by Mr. Garlick, of the Local Government Board, which is designed for open-air mixed bathing. One-third is shallow and devoted to waders, one-third fairly

deep to beginners and swimming classes, one-third deeper still for practised swimmers. Proper costume is worn, separate dressing sheds provided for the sexes, with cleansing facilities, hot and cold showers. Only a partial screen of shrubs surrounds the pool. Where water is less plentiful or expensive the chloride of lime and similar methods permit of its safe use for a prolonged period by clarifying and sterilizing action on germ life. In addition to the pool a special part should be reserved for toddlers and younger children, with shelter and organiser, and perhaps some simple apparatus.

Preventive measures have been denied us, and the metropolis has grown up in almost-complete forgetfulness of the needs of air and play spaces. Something can be done to partially neutralise these difficulties. Parks should definitely cater for children by setting aside a small, well-grassed area and local supervision and play leader, as has been done in, I think, three instances.

Every available space should be fully utilised. Children are too often shut out from school playgrounds for many hours of daylight, and, indeed, if electrically lit like parks, and the school building itself locked up, these might be used every evening throughout the year. Again the necessity for a play supervisor crops up.

Not only school grounds, but every vacant unbuilt-on space should be open to children. Even in congested areas we meet with vacant allotments, fenced and with locked gate. Till actual building is begun such should be freely open to children to play in. Such areas, if necessary, might be leased for this interval, or temporarily taken over, and the rates and taxes either remitted or paid by the municipality, and not the owner. Till actually built on no area should be reserved and rendered useless now that areas for play are so restricted. Further, the foreshores should be resumed, and playgrounds there set apart for children. Such a measure would tap many congested areas, and swimming basins could also be made available.

The difficulties are great. Whereas now in the case of resumption or taking over of Crown lands the school site is expected to consist of five acres; in the past any stray allotment large enough for the school at the time and ample for 40 or 50 children in attendance was accepted. Later, as population grew and the need for a larger playground became obvious, the land necessary was either occupied or too costly to resume.

Many of the buildings in which children are immured for several hours of the day are unsuit-

able, both from lack of accommodation and structural faults. Re-erection would be best, but is extremely costly. Remodelling is less satisfactory, and again means a big outlay of money. The population around is in many cases increasing, as the metropolitan figures are increasing yearly by tens of thousands, so that the overcrowding is progressive.

The remedy possible at present appears to be the use of transport facilities, the erection of suitable schools or camps with large playgrounds on the outskirts of the city, where open-air education could be carried out, the children travelling daily by ferry, tram or train to and from their homes.

The cost of such a school need not be great. The buildings are of the simplest, the cost of lunch and tram fares (at reduced rates) could be borne by most parents, the traffic out and in is at a period when the main business traffic is in the reverse direction. The benefit to the children even of the seven

or eight hours in the open air is very great, and specially designed for the anaemic, malnourished type of child so common in our city slums.

The whole position has reached an impasse. The expense and difficulties involved emphasise the urgent necessity for proper town planning to avoid these mistakes for the future. Prevention must again be our standby. At present our statesmen or politicians discuss all kinds of subjects, and orate on the growing of corn, fruit, sheep, cattle, pigs, but little discussion occurs, and still less knowledge exists, on the one essential of a well-governed State, viz., the growing of humans. When our legislators realise this vital function of good government, when departments and institutions and citizens combine to insist on effective provision for this sadly-neglected one-third of our population, on whose shoulders we so cheerfully are piling up the heavy burden of millions of loan money—then, and not till then, will town planning and human progress receive its due attention.

UNIVERSITY OF SYDNEY

SCHOOL OF ARCHITECTURE.

An Atelier, for the Study of Advanced Design will be opened in March next.

The Studio will be open on four evenings per week, from 6 to 9.30 p.m. Candidates must be graduates of a University School of Architecture, holders of the Diploma of the Sydney Technical College, or produce evidence of training approved by the Faculty.

Prospective candidates are invited to attend at the School of Architecture on Monday, 20th March, 1922, at 5.30 p.m., and to bring with them evidence of qualification for admission.

(Signed) H. E. BARFF, M.A.,
Warden and Registrar.

Sydney University,
14th February, 1922.

BOOKS ADDED TO LIBRARY

FROM THE COLLECTION OF THE LATE ARTHUR PRITCHARD ESQ.

These Books have the Imprint.

Masonry, Bricklaying and Plastering Burn
How to Estimate Rea
Specifications in Detail Macey
Building Specifications Leaming
Old Cottages and Farm Houses .. Davie & Dauber
Commonsense Homes Sills
Treatise on Architecture Ashpitel
Book of Country Houses Newton
Architectural Parallels Sharpe
Book of Houses Newton
Architectural Iron and Steel Birkmire
Law of Fire Insurance Colenso
School Architecture Robson
Principles of Planning Marks
High Office Buildings Birkmire

These Books are without the Imprint.

Architectural Examples in Brick, Stone, Wood and Iron.
Engineers' Standard Catalogues, 1919-1922—
Engines and Boilers.
Pumps, Machinery and Plant.
Sanitation, Heating Construction.
Electrical.
British Standard Exporter, 1919-1921—Hardware, Earthenware, Leather.
British Standard Exporter, 1920-1921—Furniture, Music, etc.
Municipal Engineers' Specification.
Colonial Compendium and Export Catalogue, 1920.
Colonial Compendium and Export Catalogue, 1921.

INSTITUTE OF ARCHITECTS

SKETCHING COMPETITION FOR STUDENTS

Mr. Howard Joseland, F.I.A., offers prizes for sketches by students in connection with the Institute Annual Exhibition.

Conditions.

1. Any medium may be used.
2. Competitors must be residents of N.S.W., and under 25 years of age.
3. The subjects must be selected in N.S.W. of old or modern work.

In judging sketches, consideration will be given to selection of subject, composition and quality of work.

First prize, £3 3s. Second prize, £2 2s.

Winning drawings to become the property of the Institute, and any Drawings submitted which are considered to be of sufficient merit by the Hanging

Committee will be exhibited at the Exhibition on March 30.

All drawings, except those premiated, must be removed by the competitors at their own expense, and although every care will be taken of the drawings, the Council assumes no responsibility as to loss or damage.

The sketches will be judged by the donor (Mr. Howard Joseland), together with Professor Leslie Wilkinson.

Drawings must be delivered to the Secretary, Institute of Architects, 5 Elizabeth Street, Sydney, not later than Monday, March 20, at 4.30 p.m.

JOHN J. LOUGH,
Secretary.

SCHEDULE OF WAGES AS PER AWARDS AND AGREEMENTS

AND THE 44 HOUR PROCLAMATION

Trade	Hours	Rate per hr.	Date from which rate takes effect.
Painters	44	2/4 ³ / ₈	May 2, 1921.
Bricklayers	44	2/7 ¹ / ₂	"
Plasterers	44	2/7 ¹ / ₈	"
Plumbers	44	2/6	Nov. 4, 1921.
Stone Polishers	44	2/3	May 2, 1921.
Stonemasons (cutters)	40	2/9 ³ / ₄	"
Stonemasons (setters)	44	2/9 ³ / ₄	"
Quarrymen	40	2/8 ¹ / ₄	"
Carpenters	44	2/6	August 12, 1921.
Slaters	44	2/7 ¹ / ₂	May 2, 1921.
Tilelayers	44	2/4	"
Builders' Labourers	44	2/3 ¹ / ₄	(As regards pay April 1, 1921.)
Pick and Shovel Men (State Award)	44	2/2 ¹ / ₄	(As regards hours May 2, 1921.)
Electrical Mechanics	44	2/3 ⁹ / ₂₂	(As regards pay March 1, 1921.)
Builders' Labourers	44	2/3 ¹ / ₄	(As regards hours April 1, 1921.)
(Members of B.L. Federation under Federal Award)			Dec. 30, 1921.
Railway, Road, Bridge, etc. Labourers	48	1/10 ³ / ₄	and upwards Dec. 30, 1921.
Crane Drivers	44	2/9	June 5, 1921.
Hoist Drivers	44	2/6	June 5, 1921.
Builders' Carters		£4/7/6	(per week) Dec. 23, 1921.
Machinists (Gen. Joiners)		£5/7/-	" " (44 hrs.) Oct. 28, 1921.
Machinists' Labourers		£4/12/-	" " (44 hrs.) "
Bridge and Wharf Carpenters		2/7 ¹ / ₂	August 12, 1921.

Note.—The new rates for Electrical Mechanics and for Railway, Road, etc., Construction Labourers are not gazetted at the time of writing but are expected to come into force on December 30.

Price of Materials.

Bricks (Common)—At Kiln, per 1000 ..	68/-
Cartage of bricks to site (as per current rates).	
Timber (Basic Prices)—	
Hardwood, per 100ft. sup. ..	37/-
Oregon	40/6
Redwood	80/-

New Zealand White Pine and Rimu

(6in. wide)	56/6
Richmond River or Hoop Pine	58/6
Cement—Per three bags (according to quan.)	20/- to 22/6

The above prices, with the exception of bricks, are for city delivery.

SCAFFOLDING AND LIFTS ACT

ISSUE OF PERMITS

Department of Labour, N.S.W.,
Sydney, 16/12/'21.

No inconsiderable amount of misunderstanding of Departmental requirements arises in connection with the application of Regulation 26 of the Scaffolding and Lifts Act, 1912, which reads:—

- “(a) No lift shall be erected, re-erected, or materially altered or repaired, or additions made thereto without first obtaining a permit, in the form ‘A’ annexed, from the Chief Inspector of Scaffolding and Lifts.
- “(b) The applicant for a permit to erect or re-erect a lift must submit a plan showing the proposed location of the lift-well on the ground-floor of the building; drawings of the lift and its enclosure, together with a full description of the lift machine and the enclosure must also be submitted. The said plan, drawings, and description will be filed in the Scaffolding and Lifts Office.”

A practice is growing up, the result of which, in many instances, is that persons concerned do not strictly comply with the provisions of this Regulation. Applications for “Permits” are received, but no plans or description of the lift enclosure are submitted therewith.

Every Lift Engineer, Architect, Builder, or other person applying for a “Permit” as prescribed must observe the conditions hereunder denoted, failing which a “Permit” will be withheld until compliance obtains. Attention is invited to the fact that should a person commence to erect or re-erect a lift or make material alterations thereto without receiving a “Permit,” such person will render himself liable to a penalty not exceeding twenty pounds (*vide* Regulation 47).

Every application for such a “Permit” is required to be made on the form supplied by the Chief Inspector of Scaffolding and Lifts at the above address. Appropriate particulars must be furnished therein by the applicant, and at the same time drawings of the lift and its enclosure must be lodged with the Chief Inspector of Scaffolding and Lifts. In addition to the detail particulars of the lift

machinery the drawings must be dimensioned and show:—

1. *To a scale not less than one-half inch to the foot—*
 - (a) A lay-out plan and elevation of the construction sustaining the overhead sheaves or machine, showing the size, span, and disposition of the various bearers and the support afforded for same; the length, breadth, and height of the motor-room, together with lighting and ventilation provision and particulars of maintenance platforms (if any).
 - (b) In plan—the lift-well, the car, car entrance, enclosures, staircase, or other construction adjacent to the lift-well. (Should it be proposed to have a second entrance to the car, each floor to be served must be specified.)
 - (c) Front and side elevations of the enclosures and sectional elevation through every door-way, the method of hanging and guiding each such door, the screens above and facias below, and the distance of these from the line of travel of the car floor nosing on the entrance side.
2. *To a scale not less than one-eighth of an inch to the foot—*
 - (a) A sectional elevation of the whole lift shaft, front to back, from the roof over the motor-room to the bottom of the pit.
 - (b) The height of the ceiling under the machine-bearers from and above the top floor.
 - (c) The distances from floor level to floor level, and the normal travel of the lift car.
 - (d) The depth of the pit below the level of the lowest landing.
3. *To any convenient scale—*
 - A plan showing the proposed location of the lift-well on the ground floor of the building and the approximate location of other lifts erected or proposed to be erected therein, together with the name of immediately facing streets or other public ways.

Where for a particular lift the enclosures on different floors are similar, and are so specified, repetition drawings are not required. Architectural features, ornamentation, and details which do not concern the safe construction, working or usage of the lift do not require to be shown. Accurate information must, however, be given respecting the height of the enclosures at the sides of the lift-well, and also of the enclosures adjacent to the

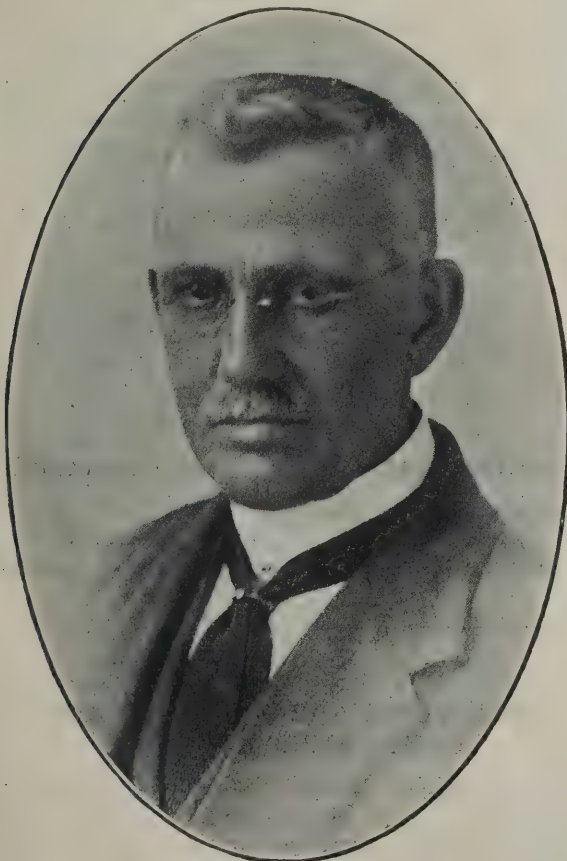
balance-weight, the sizes and mesh of wire or ribbon work fabric used for panels and screens in the enclosures must be specified, and corresponding particulars of other panel or screen construction and the material proposed to be used for like purposes.

P. A. FILDES,

Departmental Engineer and Chief Inspector,
Scaffolding and Lifts Act.

PERSONAL

Mr. Finlay E. Munro, who was elected President of the Master Builders' Association of N.S.W., on January 17, was born in 1867 at Gippsland, Victoria, but came to Sydney at a very early age. He



Mr. Finlay E. Munro

was elected a member of the Master Builders' Association in 1902, and has served several terms on the committee, being elected Junior Vice-President in 1920, and Senior Vice-President in 1921. He is also Vice-President of the Highland Society, Chairman of the Burns Club, and a member of the Council of the Employers' Federation. He has been an alderman of the Glebe Council for many years, and in 1919 he held the office of Mayor of that Municipality. He is a Past-President of the N.S.W. Bowling Association, a life Patron of the Glebe Working-men's Institute, and a member of the Executive of the Workers' Educational Association.

During the greater part of last year Mr. Munro was a member of the conference that drafted the new building ordinances for the municipalities and shires of N.S.W., and he has been appointed a member of the Advisory Committee which was inaugurated for the purpose of settling disputes and advising in regard to new building materials.

Among the more important buildings which he has erected may be mentioned the Permanent Trustee Building, O'Connell Street; the head office of the E.S. & A. Bank, and the present structure of the A.M.P. Society in Pitt Street.

XMAS GREETINGS

During the festive season Mr. G. H. Godsell, Esq. (President of the Institute of Architects of New South Wales), received felicitations from the Governor of New South Wales, Dame Margaret Davidson and Major J. S. Egerton (Private Secretary to Sir Walter Davidson).

COMPETITIONS FOR YOUNG AND OLD

(To the Editor, *Architecture*.)

Sydney, February 6th, 1922.

Dear Sir,

Mr. Sulman, in the "role" of the naughty boy who has just been admonished, like the very naughty boy explains, in your last issue, and being very naughty, his explanation omits the principal points which caused all the trouble.

A.—The conditions state "An arch or other suitable memorial." The prize designs are not arches.

B.—Near the closing date, it was stated that 7,000 names were to be included in the sum allowed, £10,000.

C.—Mr. Sulman criticised, as an adjudicator, the result of the competition in the daily press—not the professional journals—and stated that an arch could not be built for the money. Then, why ask for it?

Mr. Sulman says he draws no fee for adjudication—which is open to argument. Would it not be better to draw the fee, and give it as a prize for an Architectural Students' Competition, or devote it to charity?

The second prize design was in the form of a Greek Temple, shown in the centre of a roadway leading to a bridge, the traffic going on either side and round it, the bridge being immediately behind it.

Is that good town-planning?

Clause 7 of the conditions said: "A bridge may be erected over the river in continuation of Denham Street, hence the City Council requires that the monument shall permit of two lines of tramway as well as vehicular and pedestrian traffic. It may take the form of an archway, or any other suitable architectural features that will allow of the above without undue obstruction. *The main structure need only embrace the space required for tramway and vehicular traffic, the footways being outside same.* They may be defined by pillars or piers or some architectural feature at the competitor's option."

I have underlined the part which seems to explain what they required. "The structure was to embrace" the tramway, and not the tramway to embrace the structure.

I have always admired Mr. Sulman's methods, but that should not prevent one from shouting

"Whoa!" when the wheels are too near the edge.

Yours faithfully,

JOHN BARR.

A Criticism and Some Suggestions.

Dear Sir,

I was much interested in reading Mr. John Barr's lecture on above, and the excellent suggestions therein contained, but it does seem to me that Mr. Barr chose an exceedingly poor illustration in Mr. Baillie Scott's drawings of interiors as demonstrating his point "that all too often the actual building can never look like the representation." He says, "Put your finger over his small spot of red, and the whole scheme falls to pieces." I am inclined to think most architects will agree that this is an exaggeration, and submit that as a colour scheme, it would be incomplete under such treatment. Further, does not Mr. Barr, by this very admission, prove that there is nothing superfluous on these drawings prepared by Mr. Baillie Scott with such supreme thoroughness as studies for his works—an example which might well be followed by us all.

I would be interested to hear others on this point.

Yours faithfully,

G. WRIGHT, A.I.A.

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
Auckland Citizens' War Memorial	30/5/22	Approved
N. S. War Memorial ..	—	Under consideration.
Parramatta Public Markets	17/2/22	Approved

THE WOOLLAHRA COUNCIL AND CANTILEVER AWNINGS

The Woollahra Council has adopted a standard specification for cantilever awnings and has forwarded a copy to the Institute office, 5 Elizabeth Street, City, where it may be inspected by any persons interested.

MEMBERS OF THE INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

President: Mr. G. H. Godsell, F.I.A., 14 Martin Place, Sydney

1st FEBRUARY, 1922

Life Fellow.

Jones, G. Sydney, A.R.I.B.A., 113 Pitt Street, Sydney.

Fellows (F.I.A.)

Adam, J. S., Mutual Life Buildings, Wynyard Street, Sydney.

Allen, Alfred,

Anderson, A. W., 7 Bridge Street, Sydney.

Barr, John, Gordon Road, Lindfield.

Barlow, Jno., Bishop's Avenue, Randwick.

Blair, G. MacLeish, Govt. Architect's Branch, Dept of Public Works, Sydney.

Brodrick, R. H., Town Hall, Sydney.

Buchanan, S. H., 26 Hunter Street, Sydney.

Campbell, J., 18 Enmore Road, Newtown.

Campbell, James Ernest, 42 Alt Street, Ashfield.

Craig, R. G., Sandridge Street, Bondi.

Chambers, C. W., Holt's Chambers, 121 Pitt Street, Sydney.

Clamp, J. Burcham, 122 Pitt Street, Sydney.

Copeman, J. J., 72b King Street, Sydney.

Cosh, Thomas Frame, 16 Spring Street, Sydney.

Day, H. C., 3 Spring Street, Sydney.

Denning, Geo., 58 Hunter Street, Sydney.

De Putron, Wm., 17 Martin Place, Sydney.

Dunstan, Jno., 61 Market Street, Sydney.

Durrell, G. W., 14 Castlereagh Street, Sydney.

Esplin, D., 85 Pitt Street, Sydney.

Fairfax, C. E., Bown's Road, Kogarah.

Foggitt, W. H., c/o Housing Board, Grosvenor Street, Sydney.

Ford, B. W., Chamber of Commerce Buildings, George and Grosvenor Streets. 'Phone 409.

Gardiner-Garden, H. McB., Govt. Architects' Branch, Dept. of Public Works, Sydney.

Gilling, F. Glynn, Twyford House, 17 Castlereagh Street.

Godsell, G. H., President, 14 Martin Place, Sydney.

Grant, G. L., 14 Castlereagh Street, Sydney.

Hadley, B., Lecturer-in-Charge, Dept. of Architecture, Technical College, Harris Street, Ultimo.

Halligan, M. B., Equitable Building, George Street, Sydney.

Hennessy, John F., 247 George Street, Sydney.

Hennessy, Jack F., B.Sc.A., 247 George Street, Sydney.

Hodges, H. T., 29 Kingswood Avenue, High West Jesmond, Newcastle-on-Tyne, England.

Hodgson, T. W., 28 Martin Place, Sydney.

Hunt, Walter, Townsville, Queensland.

Jackson, H. O., Sydney Harbour Trust.

Joseland, H., Twyford House, 17 Castlereagh Street, Sydney.

Justelius, J. E., 49 Castlereagh Street, Sydney.

Kent, H. C., F.R.I.B.A., 58 Pitt Street, Sydney.

Kenwood, W., Post Office Chambers, Pitt Street, Sydney.

Kethel, J. A., 58 Pitt Street, Sydney.

Lake, J. W. H., 2 Hunter Street, Sydney.

Lamrock, W., Council Chambers, Drummoyne.

Lindsay-Thompson, E., Sydney Arcade, King Street, Sydney.

Lodge, Edwin Harry Ernest, 357 Elizabeth Street, Sydney.

Louat, Rutledge, 375 George Street, Sydney.

Macqueen, A., 8 Spring Street, Sydney.

Marks, T. J., 14 Martin Place, Sydney.

McCredie, A. L., 7 Bridge Street, Sydney.

McCarthy, J. T., Challis House, Martin Place, Sydney.

McDonald, Allan, Temora.

McRae, Geo., Government Architect's Office, Phillip Street, City.

Merriman, J. H., Town Hall, Sydney.

Minnett, R. V., 12 Loftus Street, Sydney.

Monks, William John, Wagga Wagga.

Morris, Howell Price, Lett Street, Lithgow.

Morrow, D. T., 17 Martin Place, Sydney.

Mould, S. M., A.R.I.B.A., 85 Pitt Street, Sydney.

Moorhouse, F., 105 Pitt Street, Sydney.

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Newman, W., 56 Hunter Street, Sydney.

Newton, J., 4 Gouldsbury Street, Mosman.

Nixon, W. M., 163 Pitt Street, Sydney.

Oakeshott, G. J., Commonwealth Dept. Works & Railways, Customs House, Sydney.

O'Connor, J. F., Inverell.

Parkes, Varney, 1 Castlereagh Street, Sydney.

Peddle, Jas., 8 Spring Street, Sydney.

Pender, Walter Harold, 18 Elgin Street, West Maitland.

Pickering, R. W., Union House, George Street, Sydney.

Power, Joseph Porter, B.N.Z. Chambers, Wynyard Street, Sydney.

Purdue, Archibald John, Govt. Architect's Branch, Dept. of Public Works, Sydney.

- Ramsay, L. L., 113 Pitt Street, Sydney.
 Ranclaud, P. E., 15 Castlereagh Street, Sydney.
 Reid, John, 350 George Street, Sydney.
 Roberts, George A., 76 Pitt Street, Sydney.
 Rosenthal, Sir Charles, A.R.I.B.A., K.C.B., C.M.G., 8a Castlereagh Street.
 Ross, H. E., Equitable Building, 350 George Street, Sydney.
 Rostron, W. A., Somerset House, 9 Martin Place, Sydney.
 Rowlinson, E. O. M., Boyce Road, South Randwick.
 Rowe, H. Ruskin, Equitable Buildings, 350 George Street, Sydney.
 Sampson, T. P., Pendennis Chambers, 375 George Street, Sydney.
 Saunders, A. R., c/o. Ross & Rowe, 350 George Street, Sydney.
 Scott, E. A., 115 Pitt Street, Sydney.
 Shaw, Reginald Albert 9 Martin Place, Shute, R., Point Clare.
 Silk, T. W., West Maitland.
 Smith, F. T., 88 Pitt Street, Sydney.
 Somerville, A. F. T., 273 George Street, Sydney.
 Spain, Alfred, F.R.I.B.A., 16 Spring Street, Sydney.
 Steer, Victor G., 68½ Pitt Street, Sydney.
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 Vicars, Jas., Challis House, Martin Place, Sydney.
 Wagstaff, Harry James, 491 Bourke Street, Melbourne.
 Warden, Sidney, 8a Castlereagh Street, Sydney.
 Wardell, H. E., 58 Hunter Street, Sydney.
 Waterhouse, B. J., 2 Hunter Street, Sydney.
 Wells, R. M. S., Dept. Public Instruction, Sydney.
 White, H. E., Equitable Building, George Street, Sydney.
 Wilshire, H. A., 3 Spring Street, Sydney.
 Wilkinson, Prof. Leslie, F.R.I.B.A., School of Architecture, Sydney University.
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 Wright, Arthur Henry, 79 Pitt Street, Sydney.
- Associates (A.I.A.).*
 Allen, Frederick George Leslie, 4 Castlereagh Street, Sydney.
 Allan, W. W., 23 Moore Park Road, Paddington.
 Aley, Augustus, 54 P.O. Chambers, Sydney.
 Alsop, Rodney H., F.R.I.B.A., 352 Collins St., Melbourne.
 Backhouse, O., c/o Architects' Branch, Dept. of Education, Sydney.
 Barry, William George, 170 Ben Boyd Road, Neutral Bay.
 Baxter, Gerald Preston, Dept. of Public Works, West Kempsey.
 Bayley, Arthur L., 92 Wardell Road, Dulwich Hill, Sydney.
 Bloomfield, Frank l'Anson, A.R.I.B.A., 4 Undercliff Street, Neutral Bay.
 Beckley, Percy G., 97 Flood Street, Leichhardt, Sydney.
 Board, F. J., Lismore.
 Bohringer, Charles, Earle Street, Roseville.
 Bretnall, Eric Charles, 49 Castlereagh Street, Sydney.
 Buckle, F., 107 Pitt Street, Sydney.
 Budden, H. E., E.S. & A. Bank Chambers, George and King Sts., Sydney.
 Cambridge, Ernest Robert, Railway Construction Branch, Public Works Dept., Sydney.
 Carfrae, Alec Swinton, 113 Pitt Street, Sydney.
 Chapman, Victor Charles, Carlos Street, Artarmon.
 Chinn, Frederick Henry, c/o. H. E. White, F.I.A., Box 1216, G.P.O., Sydney.
 Cizzio, V. D., c/o S. Warden, 8a Castlereagh Street, Sydney.
 Clark, A. Lanyon, 81 Elizabeth Street, Sydney.
 Clatworthy, Frank, c/o Manson & Pickering, Union House, George Street, Sydney.
 Collins, Roscoe J., 12 Castlereagh Street, Sydney.
 Colman, Arthur Ernest, c/o. Architects' Branch, Phillip Street, Sydney.
 Cook, G. S., Dept. Works and Railways, 151 Collins Street, Melbourne.
 Copeland, Cecil R., Works and Railways Dept., Customs House, Sydney.
 Crane, Arnold N., Daily Telegraph Buildings, King Street, Sydney.
 Crust, John, Dept. of Works & Railways, Customs House, Sydney.
 Dalziel, John George, 22 Queen Street, Mosman.
 Darling, T. J., 8 Spring Street, Sydney.
 Dawson, Joshua, 152 West Street, N. Sydney.
 Deeble, John Nation, Byng Street, Orange.
 Donoghue, Jack Patrick, C/o. Hennessy & Hennessy, 247 George Street, Sydney.
 Douglas-Smith, Arthur, 4 Bridge Street, Sydney.
 Duckworth, Bertram C., Chester Street, Woollahra.
 England Wilbert Osbourne, 64 Pitt St., Sydney.
 Fair, A. C., 6 Canberra Flats, Murdoch Street, Cremorne.
 Fowell, Joseph Charles, A.R.I.B.A., 243 Benelong Street, Cremorne Junction.
 Gates, Herbert John, "Carthona," Murdoch Street, Cremorne.
 Gerard, Allen W., School of Architecture, Sydney University.
 Gill, W., Casino.

Glancey, Clement, 2b Castlereagh Street, Sydney.
 Graham, Hedley Vicars, 35 Pitt Street, Sydney.
 Gray, G. B., 375 George Street, Sydney.
 Green, E. R., A.R.I.B.A., 115 Pitt Street, Sydney.
 Greenwell, C., B.Sc.A., A.R.I.B.A., E.S. & A. Bank Chambers, George and King Streets, Sydney.
 Grove, H., Govt. Architect's Office, Phillip Street, Sydney.
 Hamilton, Claude, Daily Telegraph Building, King Street, Sydney.
 Harris, R. Keith, A.R.I.B.A., 72b King Street, Sydney.
 Harrison, George Leslie Blair, 66 Shadforth Street, Mosman.
 Hardwick, H., Mudgee.
 Henderson, Edwin Herbert, Dept. of Works and Railways, Customs House, Sydney.
 Herbert, Leonard Frederick, "Glenwood," Tor Road, Dee Why, Manly.
 Hoare, J. N., Messrs. Weston & Hoare, 14 Martin Place, City.
 Hodgson, Allan Mathew, Bull's Chambers, 28 Martin Place, Sydney.
 Holmes, H. E., c/o. Metropolitan Board of Water Supply & Sewerage, Pitt Street, Sydney.
 Hurd, Samuel J., 55 Pitt Street, Redfern.
 Hughes, Gilbert Noel, Roslyndale Avenue, Woollahra.
 Ironside, William Thomas Raymond, "Eatonia," Stirling Street, Redfern.
 Innes-Kerr, William, B.M.A. Chambers, 32 Elizabeth Street, Sydney.
 Jeffs, C. E., Wagga Wagga.
 Jones, Norman Llewellyn, Agricultural Dept., Mines Museum, George Street N., Sydney.
 Jorgensen, James Henry, 48 Ben Boyd Road, Neutral Bay.
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 Kenworthy, George Newton, Tryon Road, Lindfield.
 Kerr, James Aubrey, Morton Street, Wollstonecraft, Sydney.
 King, A. S., 200 Birrell Street, Waverley.
 Leggatt, Frank Redmayne, Bellevue Street, North Sydney.
 Lockley, H., "Maberry," Highlands Avenue, Gordon.
 MacIntosh, Harry Brewster, East Market Street, Richmond.
 Mackellar, Crawford Hutcheson, 122 Pitt Street, Sydney.
 Maclean, Harold Alfred, Wollondale, Turramurra.
 Manfred, Herbert Charles, Belmore Square, Goulburn.
 Mandelson, Maurice Roy, Parsley Road, Vacluse, Sydney.
 Martin, A. H., "Silverdene," Victoria Street, Roseville.

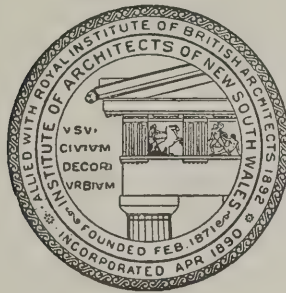
Massie, H. H., Messrs. Kent & Massie, 58 Pitt Street, Sydney.
 Mathers, Robert Melrose, 63 Awaba Street, Mosman.
 Mathers, William Melrose, Lennox Street, Mosman.
 Mathison, G. H., "Runnimeade," Grosvenor Street, Croydon.
 McBurney, Harold N., 15 O'Connell Street, Sydney.
 McCredie, L. C., "The Lum" Rydale Road, off Fourth Avenue, Eastwood.
 McCredie, L. G. H., C/o. J. & H. G. Kirkpatrick, Findon House, Flinders Lane, Melbourne.
 Mead, Harold Roderick, 92b Pitt Street, Sydney.
 Mills, J. C. R., 38 Martin Place, Sydney.
 Money, Percy John, 21 Shackel Avenue, Waverley.
 Moore, John D., A.R.I.B.A., 72b King Street, City.
 Morrow, John Donald, Fitzmaurice Street, Wagga Wagga.
 Moyes, William Shepherd, Architects' Branch, Dept. of Public Works, Sydney.
 Neave, S. A., A.R.I.B.A., 247 George Street, Sydney.
 Noone, John Murray, Architects' Branch, Dept. of Public Works, Sydney.
 Nurzey, N., Technical College, Sydney.
 Osborne, Alfred James, Renwick Street, Drummoine.
 Owen, P. T., Commonwealth Works Dept., Melbourne.
 Oxenham, S. S., Council Chambers, Bowraville.
 Parker, H. E., "Dakota Flats," Upper Avenue Road, Mosman.
 Peplow, David, 3rd Avenue, Campsie.
 Peplow, F. W., C/o. Hennessy & Hennessy, 247 George Street, Sydney.
 Pitt, Eric Clarke, 117 Pitt Street, Sydney.
 Prevost, R. A. de T., 17 Castlereagh Street, Sydney.
 Roarty, S., A.R.I.B.A., Daily Telegraph Buildings, King Street, Sydney.
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 Rutledge, Ralph Gordon, Daily Telegraph Building, King Street, Sydney.
 Ruwald, Cyril C., A.R.I.B.A., Palmer Street, Chatswood.
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 Seale, Joseph Richard, Mason Avenue, Cheltenham.
 Shaw, R. A., c/o. W. J. Monks, Wagga Wagga.

- Shiels, N. Villar, 4 Castlereagh Street, Sydney.
 Smith, C. H. Strachan, c/o. Post Office, Tweed Heads.
 Spark, Charles Henry, R.S.S. Branch, Warwick Building, Hamilton Street, Sydney.
 Sparke, A., Wahroonga.
 Soden, Leslie John, Barker Road, Strathfield.
 Stansfeld, J. S., Pendennis Chambers, George Street, Sydney.
 St. Julien, C. W., 207 Bondi Road, Bondi.
 Sykes, Joseph, 76 Bridport Street, Albert Park, Melbourne, Vic.
 Taylor, Florence Mary (Mrs.), 20 Loftus Street, Sydney.
 Thorne, W. T., Albury.
 Tingle, E., Watt Street, Newcastle.
 Todd, C. H. Uttley, Dept. of Works and Railways, Selbourne Chambers, Pirie Street, Adelaide, S.A.
 Traill, S. John, Warrawee, Sydney.
 Walford, Dudley Vivian, Commerce Building, Ash Street, Sydney.
 Walker, Charles Mack, 114 Hunter Street, Sydney.
 Wall, W. B., Govt. Architect's Office, Phillip Street, Sydney.
 Ward, Peter, Newington Road, Stanmore.
 Waterston, H. C., 17 Castlereagh Street, Sydney.
 White, H. C., Singleton.
 White, W. T.
 Withers, W. H., Campsie.
 Wilton, F. H. B., Equitable Building, George Street, Sydney.
 Wilshire, Esmond B., Yaralla Chambers, 109 Pitt Street, City.
 Winter, C. R., A.R.I.B.A., c/o Messrs. Robertson & Marks, Martin Place, Sydney.
- Wood, O. P., A.R.I.B.A., Daily Telegraph Building, Sydney.
 Woodforde, Marcus Victor Ernest, C/o. Wilson, Neave & Berry, 247 George St., Sydney.
 Wright, George, "Clifton," Kenneth Street, Longueville.
 Young-Wai, Samuel, 12 Dover Street, Summer Hill.
- Honorary Members.*
- Blacket, Cyril, Tasman Park, St. George's Basin.
 Carter, Norman, Vickery's Chambers, Pitt Street, Sydney.
 Cohen, Judge, Judges' Chambers, District Court, Queen's Square.
 Davey, J. J., "Bransburton," Day Street, Marrickville.
 Ifould, Wm. H., Principal Librarian, Public Library, Sydney.
 Lister-Lister, W., 76 Pitt Street, Sydney.
 Lysaght, Herbert Royse, 8 Spring Street, Sydney.
 Mann, G. V. F., Director of the National Art Gallery.
 Souter, D. H., 17 Castlereagh Street, Sydney.
 Sulman, John, F.R.I.B.A., Warrung Street, McMahon's Point.
 Walker, Frank, Chatswood.
 Warren, Professor W. H., Sydney University.
 Watson, Capt. James H., 3 West Street, North Sydney.
- Students*
- Beaver, Harold C., "St. Aidans," Darling Street, Chatswood.
 Smith, W. M., "Roslyn," Beauchamp Street, Marrickville.

John J. Lough, Official Secretary, 5 Elizabeth Street, Sydney.

ARCHITECTURE

THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



MARCH 15TH
1922

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INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

MINUTES OF A GENERAL MEETING

*Held at the Royal Society's Hall, 5 Elizabeth Street, Sydney,
on Tuesday, February 14, 1922, at 8 p.m.*

Present: Mr. G. H. Godsell (the President) was in the chair, and thirty members attended.

Death of Mr. J. W. Manson, F.I.A.

The President referred to the loss sustained by the Institute owing to the death of the late Mr. J. W. Manson, F.I.A. The members stood while the President spoke.

Minutes.

The minutes of the General Meeting of 20th December, 1921, were read and confirmed.

Institute Endowment Fund

The President announced that an Institute Endowment Fund had been created, primarily for educational purposes, but for the ultimate end that the Institute might eventually have an income from vested funds apart from subscriptions. To this Endowment Fund the President had paid £14/10/-, and Mr. B. J. Waterhouse (the Vice-President), £10, so that it stood in credit to-day at £24/10/-. Any member who happened to have surpluses to spare from time to time might, if so disposed, hand them over to the Institute to swell the Endowment Fund.

Mr. G. Sydney Jones announced that he would forward the sum of £4/4/- annually to the Fund, that being the amount of annual subscription which his Life Membership precluded him from paying in the ordinary way.

The President thanked Mr. G. Sydney Jones.

The Pritchard Trust.

The President stated that a Pritchard Trust had been formed for the purpose of raising funds to educate the children of the late Mr. A. F. Pritchard, F.I.A. A committee of seven had been formed of representatives of the Institute and Master Builders' Association, and that small Committee had donated ten guineas each, making a total of seventy guineas. On the 8th March next, when the Annual Cricket Match was to be played, with the usual Smoke Concert to follow, special appeals would be made, and it was expected by that means to raise sufficient money for the purpose stated. A Memorandum of Trust had been drawn up by Messrs. Minter, Simpson & Co.

Resolution.

Mr. B. J. Waterhouse moved, and Mr. S. M. Mould seconded: "That country members be charged the same fees as metropolitan members."

Mr. Waterhouse said that the Council had from time to time ruled in accordance with the terms of the resolution, but country members had lately been making enquiries, and he thought it wise that a General Meeting should settle the question once and for all. The arguments for the resolution were that membership of the Institute was of far more value to the country than to the town member, and that when the country member visited town he could make the Institute offices his headquarters. The arguments against were that membership of the Institute was of little or no use to the country member, that he could not make use of the library, or attend the General Meetings. Mr. Waterhouse considered that the arguments for had greater weight than those against.

Mr. Mould, in seconding the resolution, added the argument that city members sat on committees and did a great deal of work by which country members benefited.

Mr. G. B. Gray supported the motion.

Mr. A. W. Anderson considered that it would be well, in view of the possibility of registration decreasing the Institute's Roll of Membership, to make some concession to country members, and suggested that a reduction of twenty-five per cent. in the subscription fee would meet the case. Mr. Waterhouse took the wind out of Mr. Anderson's sails by showing from the records that at a Council meeting of recent date Mr. Anderson moved: "That the subscriptions of country members should remain the same as those of town members."

Mr. Reginald Shaw favoured a reduction.

Mr. J. Peddle spoke strongly in favour of the motion. He emphasised the fact that city members performed a great deal of work which the country members had not the opportunity to perform, although they derived the benefit, and their fees certainly should not be reduced. He instanced the work of town members on the Local Government Ordinances, on the Registration Bill, and on numerous important Committees.

Mr. G. Sydney Jones said that he thought it might be hard for architects to pay two fees in the future, namely, one to the Institute and one to the Government.

The President said that the registration fee would be £2/2/- per annum, and that all architects would find it advisable to be members of the Institute.

Mr. J. Peddle said that the experience of the United States was that registration did not lessen the interest taken by architects in their Institutes.

Mr. E. O. M. Rowlinson said that in two recent law cases the Judges had taken his evidence in preference to that of others because he was a member of the Institute.

The resolution was put and carried *nem. con.*

Lecture.

Mr. Varney Parkes, F.I.A., then delivered his lecture entitled "The History of Rocks and Process of Formation." The illustrations being from drawings by Mr. Parkes.

Mr. President, in this talk with you—for a talk it alone is without preliminary remarks and going

before it is possible to wholly and truly understand its ancient processes of formation, since a great part of the ancient evidence is irretrievably lost.

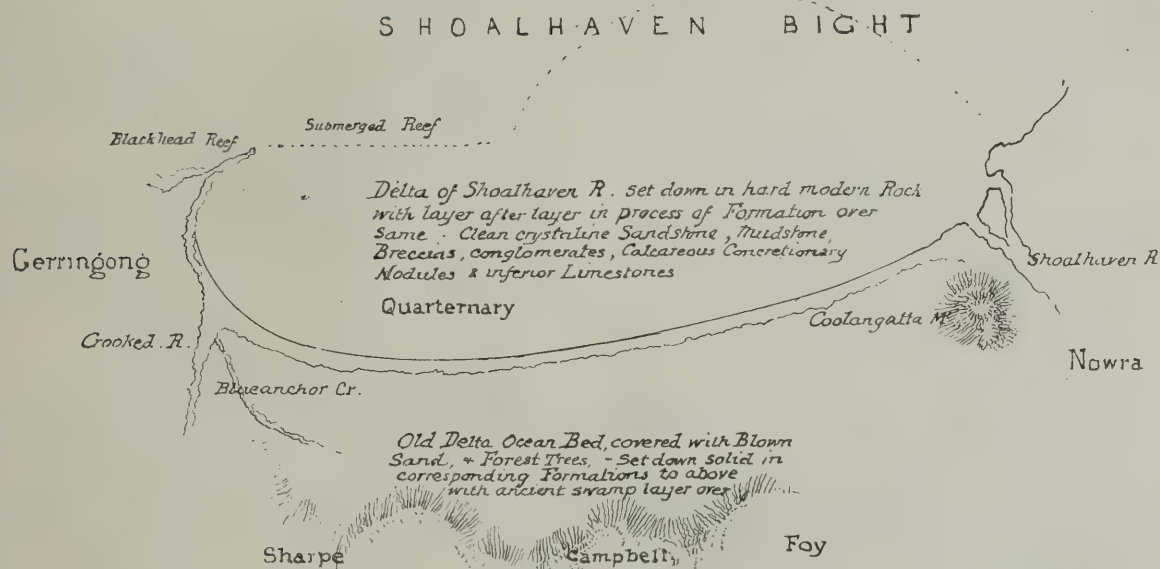
Commencing with the nearest formation to our time, *viz.*, the

Quarternary.

So complicated, various and incomprehensible is rock formation that often, in this, the last period (geologically) of the rock series, that whilst earth—sand and mud (*argilla*)—are often in Quarternary formation found hard and solidly indurated, in the oldest formations they are found yet quite soft and unaffected, just as they were deposited many, many millions of years ago.

Now in all parts of the world, rock of all description is actually in formation at the present time, in like manner as of old. In our own country; where one or two of our rivers are cutting their way

Diagram showing a Locality where "Modern" Quarternary Rock is now forming.



straight to the subject—there is in all probability no recreation in life so intensely interesting as the study *in situ* of the ancient rock formations—so ancient, that in many cases their age ranges beyond all calculation—which form the crust of the earth, and the wonderful fossil constituents which have affected the metamorphism of nearly all sedimentary rocks. Of course, the views which I shall express are those of my own personal observation, and are, like all opinions upon the lithic envelope of the earth, open to challenge by further and closer observations and more abundant evidence, for, in fact, so much remains in doubt that the world will come to an end

through limestone country or through carboniferous rock charged with silica, sodium, ferrous sulphates, and calcareous deposits generally, the delta beddings at their mouths are setting down into modern rock of every description, and when studied may give a splendid lesson in the formation of types of ancient sedimentary rocks. My exhibits, which necessarily have had to be very limited, sufficiently show this:—

One of the best of the Australian rivers for purpose of Quarternary formation research is the Shoalhaven. This river, in its upper reaches, has cut its way deeply through Siluro-Devonian Shales and Schists, and in the greater part of its course

through Limestone. In its lower regions, towards the sea, it cuts deeply through Carboniferous rock and finally casts its waters—saturated with the above-mentioned elements—into the sea at Shoalhaven Bight, there to remain, gradually sinking its sediments in the heavy salt waters. The exhibits lying on the table are entirely from this source, as others from other districts do not so well illustrate the formation; for instance, those which are associated with inland wasted Lime belts and cavern stalagmite, or those of old calcareous swamp deposits, of which many such exist.

Thus the floor of the Shoalhaven Bight is laid down in solid modern rock of many types.

The area is shown in the following diagram:—

Mr. Parkes here gave a detailed description of each exhibit, and the many architectural uses which might be made of them, in the use of some of their substances for making cements, and for formation of architectural ornamentations, etc.

Tertiary.

Passing from the Quarternary, Mr. Parkes exhibited interesting specimens of Tertiary Limestone, Sandstone, and Grits.

Rocks of the Tertiary of Australia, like the Quarternary, often exhibit a hardness and durability greater than some of very old periods. For a study of this period, no area affords more interesting research than the North Coast of Tasmania, and the coast line of Victoria and South Australia, the valley of the River Murray, and the argilla deposits of Dalton, N.S.W., and the interior plains of Queensland and South Australia.

The Limestone formations of Table Cape, Tasmania, Flinders Islands, and part of the Victorian coast line exhibit splendid examples of the various degrees by which Shell beds, Corals, Foraminifera and Nummulites, by the gradual process of time and their own silification, become compact marble, only requiring the infiltration of organic iron to give them all manner of tints and dyes. The exhibits produced are made up entirely of the above organisms, and though being of about the same age, they vary greatly in their nature of formation, solidity, and texture, as may be seen by the use of a glass.

When the early Eocene to Miocene rocks were being laid down and forming, the fossils contained in them, and the materials of their composition, indicated a very hot tropical climate, and a very calcareous form of soil of surrounding lands, no doubt the waste of later Mesozoic times.

These Tertiary rocks also, by their extended area, show that in the beginning of the Tertiary and at the end of the Cretaceous, the present Con-

tinents consisted of two large Islands, viz.: The sea-board lands of the East of Australia, extending in all probability from New Guinea to Tasmania, and the other being the central lands of Western Australia. That Tasmania joined the mainland is clearly proved, since the Eocene deposits shown at a regular height through the north of Tasmania, through the Furneaux Group of Islands in Bass Strait, and along the coast of Victoria and South Australia, and underlying igneous outpouring, have since been cut away by ocean action to form Bass Straits, proving the immense age of the Tertiary period alone.

Mr. Parkes here explained the nature of formation of each of the Tertiary exhibits on view.

The Mesozoic.

Trias-Cretaceous.

The rocks of the Mesozoic are the best known to us as architects, for we use them almost exclusively in building. They comprise sandstones, shales, and fine grained fresh-water sedimentation, and grit stones and conglomerates. They are rocks which have been laid down in fresh-water lakes (lacustrine), or in brackish water (estuarine) to some extent). These compositions (sandstones) in the main are of silicious granules, cemented by infiltrated silica and iron, and are very prone to waste upon the escape of oxygen.

The shales, as well as fine grained stones, being the waste of denuded, older lands, exhibit a great variety.

Mr. Parkes here explained the composition of the exhibits placed before the audience.

Palaeozoic.

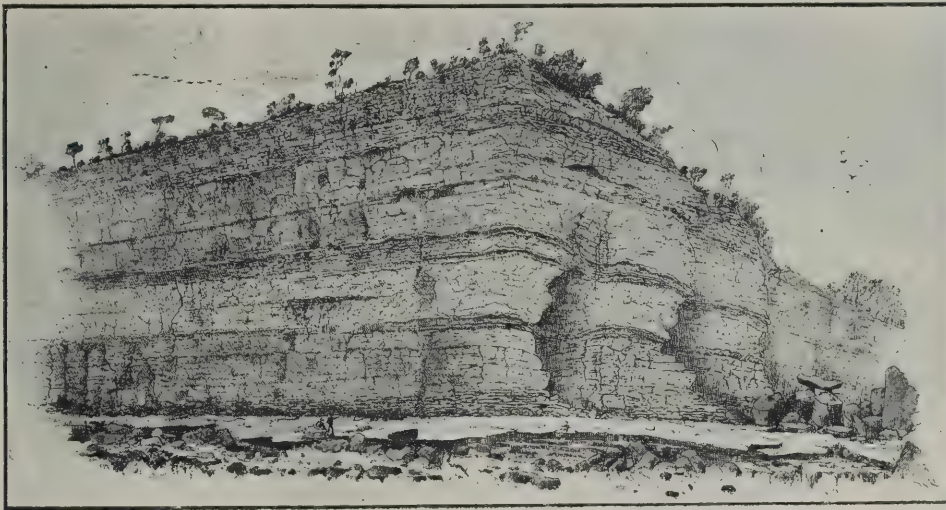
The Permo-Carboniferous or Carbo-Permian.

Of all the rock series of our country, the Permo-Carboniferous rocks are the most abundant and interesting. In no part of the world are they more beautifully displayed, and extend over so great an area as with us, and throughout their entire range they carry in profusion well preserved fossils, as thickly strewn in the matrix as a plum pudding with its raisins and currants.

This series of rock are so varied that it would not be difficult for me to show fully five hundred types of formation from my collection alone. The sandstones are for the most part excellent durable building material, of all conceivable tints of colour, of extremely pretty shades. The shales are also so indurated as to resist decay, quite different from the shales of the Trias. These rocks form the foundation rock of almost all Australia, and particularly of the States of New South Wales and Tasmania, and are in some positions beautifully horizontally bedded.

The fossils in these Permo-Carbo formations illustrate that the whole were laid down in a shallow sea—shells, wood, pieces of older stones, and

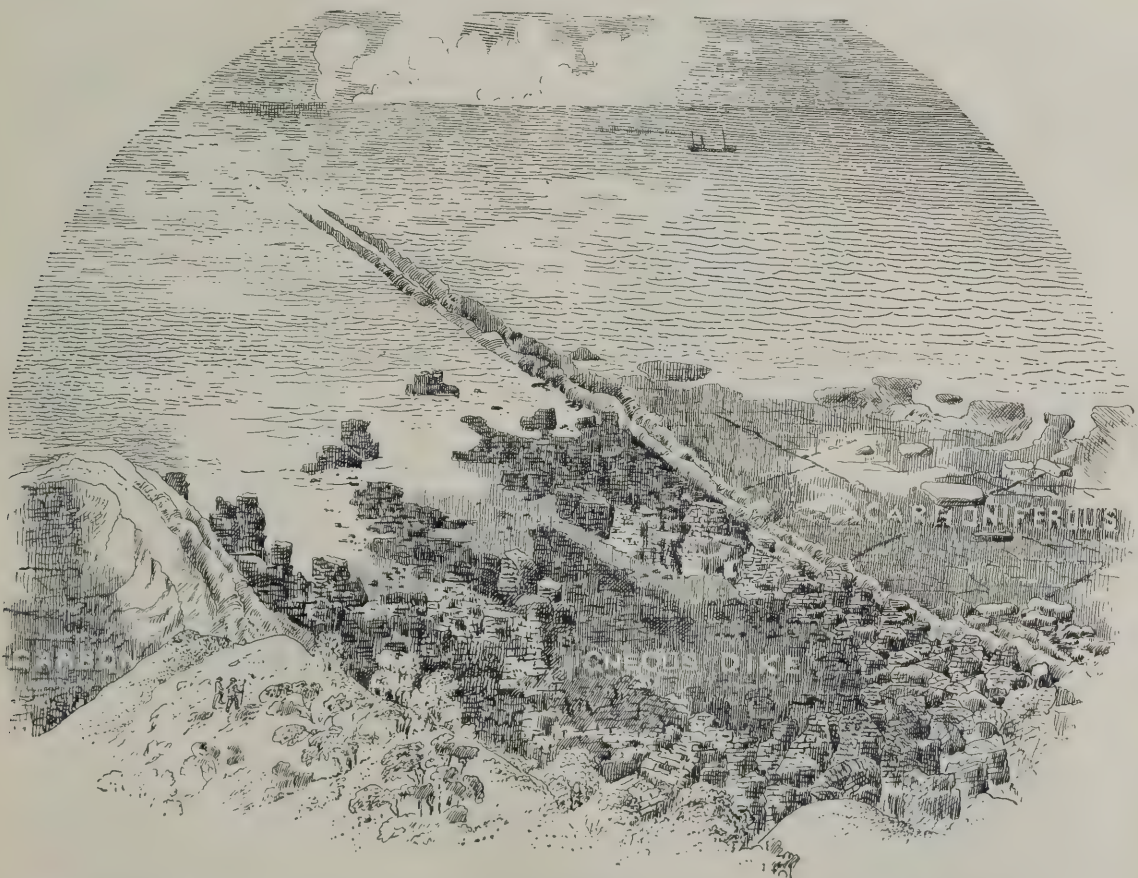
of later rocks occur in the cutting away and waste by action of the elements, and through them penetrate the more ancient formations, they having been set



North Headland, Pebbly Beach, near Bateman's Bay

pebbles of older date, without doubt carried by ice drift, are distributed throughout them. The Carboniferous rocks crop up everywhere, where sections

down around them, and must have, from their appearance, for a vast period of time rested in quietude, with a uniform and mild climate.



Igneous dike one mile north of Wyro, Ulladulla, showing rupture, uplift, and folded margins of Carboniferous Sandstone and Shale. This dike exceeds a hundred yards in width.

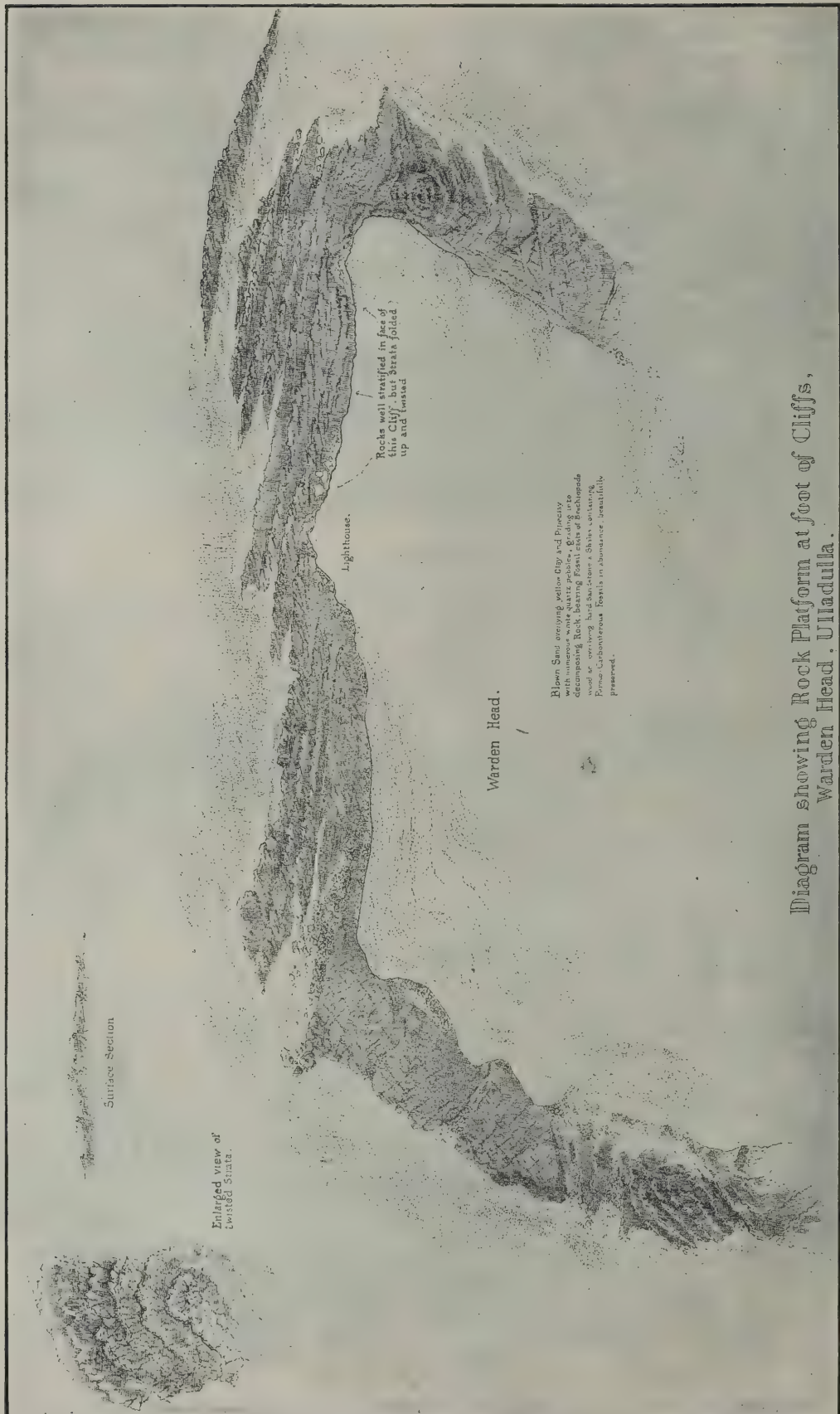


Diagram showing Rock Platform at foot of Cliffs,
Warden Head, Ulladulla.

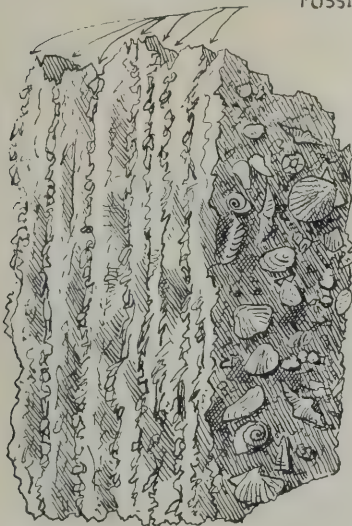


Warden Head Ulladulla.

At their closing period they seem to have been torn to pieces, split, folded and tortured by vulcanism, and in certain areas they seem, during their process of setting down, to have been crushed up and folded by ice pressure.

Mr. Parkes here explained his many exhibits, and

Diagram showing
Slabbed block of Carboniferous
Rock - fossil Bedded - which is readily
on bedding and might be used for
decorative Panel work. Ulladulla District
Fossil Bands



Fossil Beddings Cliffs of Ulladulla

gave a detailed description of the architectural uses that could be made of Permo-Carboniferous formations, particularly the manner in which slabs may be

divided on even fossil bedding for internal panel decoration, being really Nature's beautiful sculptures such as the hand of man could never produce.

Earlier Palaeozoic Rocks.

Mr. Parkes then exhibited the marbles, limestones, sandstones, and shales of Siluro-Devonian rocks, giving a full description of their locality, bedding and formations, and their architectural uses, and finally dealt with the volcanic and metamorphic rocks of the earlier Archæon and Proterozoic periods.

Vote of Thanks.

Mr. A. W. Anderson proposed a vote of thanks to the lecturer and expressed the surprise and gratification of the members at the wealth of knowledge displayed by Mr. Parkes, and the extent of the fossil collection which he displayed. He had no previous idea that the country was so rich in fossils, but he did know that Australia contained building stones equal to those of any country in the world, but the difficulty was to get them.

Mr. B. J. Waterhouse seconded. He said that the building stones used in Sydney, such as sandstone and trachyte, showed signs of exfoliation in the former and of cracking in the latter. He sought information as to the cause and possible prevention.

Mr. Parkes replied that so long as oxygen was carried into the pores of sandstone by rain water and finally escaping when dry, exfoliation must ensue; and that trachyte was a treacherous stone and should never be called upon to bear weight when worked in columns.

The President put the vote of thanks, which was carried by acclamation.



Black Limestone block, exposing Marine Fossils.



Permo-Carboniferous panel of Wyro, near Ulladulla.

INSTITUTE OF ARCHITECTS' ANNUAL EXHIBITION

PARTICULARS AND CONDITIONS

An Exhibition is to be held in the Art Exhibition Room of the Education Building, Sydney, from Thursday, 30th March, to Wednesday, 12th April, 1922, both days inclusive.

The Exhibition will be opened on Thursday, 30th March, at 3 p.m.

There will be no charge for admission.

Conditions.

1. Any Architect, Painter, Sculptor, Designer in Applied Arts, or Student in Architecture, may submit exhibits.

2. Exhibits are limited to work not previously exhibited in Sydney.

3. There will be an entrance fee of 2s. 6d., and same must be sent with each exhibit. Half the entrance fee will be retained in case of rejected exhibits. Students' work will be admitted free.

Sections.

1. Designs for public and commercial buildings.

1a. Designs for warehouse buildings.

2. Domestic work.

3. Ecclesiastical work.

4. War memorials.

5. Sketches of architectural subjects (any medium).

6. Designs or examples of furniture, stained glass, wallpapers, metal work, or other applied arts.

7. Sculpture, wood carving, modelling, metal work.

8. Measured drawings and drawings of buildings of historical importance.

8a. Students' work.

9. Constructional details.

10. Designs, the motif of which is the use of flora or fauna.

11. Mural decoration.

12. Town planning, lay-out schemes of gardens, etc.

Note.—The above exhibits will include scale drawing and models, details, perspectives, photographs, etc., connected with such work. Explanatory plans should accompany elevations and perspectives wherever practicable.

General Conditions.

1. The Hanging Committee reserves the right to reject any work submitted.

2. Every work submitted must be signed. On the back of each exhibit must be pasted a label stating:—

(1) The section for which it is intended.

(2) The title.

(3) Name and address of exhibitor.

The above information must be repeated for the purpose of cataloguing on a tie-on label to hang over the front of the exhibit.

3. No copy of any kind will be admitted, except in students' work. Measured drawings must be from actual measurements by the exhibitor, and original sketches may be suitably attached.

4. All drawings must be suitably mounted on stretchers, or other stiff material (frames preferred), and all to be subject to the approval of the Hanging Committee.

5. All rejected exhibits must be removed by the exhibitors within three days from notification of non-acceptance.

6. All exhibits must be removed by the exhibitors within three days after the close of the Exhibition. Country exhibits will be returned, provided that postage be sent to defray cost of same.

7. All drawings intended for exhibition must be delivered at the Exhibition Room, Education Building, Sydney, on or before Tuesday, 21st March. Delivery to be made during departmental hours.

8. Every care will be taken of the exhibits, but the Institute will not be responsible for any loss or damage to same.

All communications must be addressed to Mr. H. C. Day, Hon. Secretary of the Exhibition Committee, c/o. Institute of Architects, 5 Elizabeth Street, Sydney.

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
Auckland Citizens' War Memorial ...	30/5/22	Approved
N. S. War Memorial ...	—	Approved.

STUDENTS' DESIGNING CLUB

Result of No. 5 Competition

A Channel Tunnel Entrance.

Only one design was received in this competition, and we are unable to congratulate the single competitor on his efforts.

The treatment is very ordinary, and the draughtmanship very poor and unfinished.

We are unable to award "Hope" more than 20 marks.

ARCHITECTURE

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INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

The Council's Report for year ending

14th February, 1922.

The Council presents the following report of its activities for the past twelve months:—

Roll of Members.

There are on the Roll one Life Fellow, 104 Fellows, 137 Associates, 13 Honorary Members and 2 Students.

Obituary.

During the twelve months the following members have passed away:—

Mr. A. F. Pritchard, F.I.A., ex-President, whose unsparing devotion to Institute affairs will be long remembered.

Mr. J. W. Manson, F.I.A., prominent among the leaders.

Mr. Peter Bennett, F.I.A., of Newcastle.

Mr. S. Herbert, A.I.A., of the Government Architect's Branch, Public Works Department.

General Meetings.

The General Meetings held and their special features were:—

March.—Annual Meeting. Election of New President and Council.

April.—Presidential Address by Mr. G. H. Godsell. Lecture, "Architectural development of the University," by Professor Wilkinson, F.I.A., F.R.I.B.A.

May.—"Possibilities of the Annual Exhibition of the Institute of Architects," by Mr. W. H. Ifould.

June.—President's Evening. Lecture, "Sydney's Congestion, and how to get rid of it," by Mr. R. Race Lewis.

July.—Debate on Quantities forming part of the Contract.

August.—Lecture, "Specialisation and Advertising," by Professor Wilkinson.

September.—President's Evening. Presentation of his portrait in oils, and Life Membership to Mr. G. Sydney Jones, F.I.A., A.R.I.B.A.

October.—Lecture, "The Sydney Harbour Bridge," by Mr. J. J. C. Bradfield, Engineer for Metropolitan Railway Construction, and for the Sydney Harbour Bridge.

November.—Lecture, "Competition for Young

and Old," by Mr. John Barr, F.I.A. Lecture, "The New Building Ordinances," by Mr. J. Peddle, F.I.A.

December.—The Annual Dinner.

February.—Lecture, "The History of Rocks and Process of Formation," by Mr. Varney Parkes, F.I.A.

The President entertained the members in June, and the members with their friends in September. On the President's evenings musical programmes were arranged and enjoyed.

Council Meetings.

Twenty-nine meetings have been held, and a great volume of business has been transacted. The attendances of the members were as under:—

Mr. G. H. Godsell, President	27
Mr. G. Sydney Jones, Ex-President ..	12
Mr. B. J. Waterhouse, Vice-President ..	29
Mr. R. W. Pickering, Hon. Secretary ..	10
Mr. H. C. Day, Hon. Asst. Secretary ..	25
Mr. D. T. Morrow, Hon. Treasurer ..	11
Mr. J. S. Adam, Councillor	22
Mr. F. Glynn-Gilling, Councillor ..	21
Mr. S. M. Mould, Councillor	24
Mr. H. V. Vernon, Councillor	19
Professor Leslie Wilkinson, Councillor ..	20
Mr. R. Keith Harris, Councillor	26
Mr. L. C. McCredie (Councillor), granted three months' leave on 6/12/'21 ..	13

Committees.

The following Committees have been at work during the term, and have been zealous in their respective spheres. The Institute is greatly indebted to them for so much good work:—

Practice Committee.
Education and Examination Committee.
G. Sydney-Jones Presentation Committee.
University and Technical College Committee.
New Premises Committee.
Exhibition Committee.
Journal Committee.
Town Planning, Housing and Competition Committee.
Finance Committee.
Materials Committee.
A.I.F. Memorial Committee.

In some instances the reports of these Committees are appended, and will be perused with interest.

The President's Hospitality.

The President has distinguished his first year of office by his endeavour to get the members together in Social intercourse, and he introduced this policy at the very earliest opportunity by giving a *Conversazione* and a Smoke Concert in connection with the exhibition held in March, 1921, and later by another Smoke Concert at the General Meeting in June, and by another *Conversazione* on the occasion of the G. Sydney-Jones presentation in September.

The Architects' Act.

The Architects' Act passed through Parliament on November 15, 1921, was assented to on November 28, and the members of the first Board were gazetted on January 27, 1922.

Thus have triumphantly terminated the labours of the Institute through many long years.

The Exhibition.

The Sixth Exhibition under the auspices of the Institute was held in March, 1921, and was considered to be the most attractive of the series. Mr. H. C. Day was the Honorary Organiser, and every credit is due to him for the success of the undertaking.

Arrangements are in hand for another Exhibition, which will be held, as before, in the Art Gallery of the Education Building by the courtesy of the Under-Secretary, Mr. Peter Board.

Federal Council A.I.A.

It was proposed to hold a meeting of the Federal Council at Hobart in January, 1922, but at the last moment it was discovered that no quorum would be available, and consequently the locale was transferred to Melbourne. The President, Mr. G. H. Godsell, and the Vice-President, Mr. R. J. Waterhouse, attended as Delegates from the Institute at a meeting on February 3 and 4.

The influential position held by the Institute of Architects of N.S.W. is demonstrated by the fact that Mr. G. H. Godsell was unanimously elected President of the Federal Council for the ensuing twelve months. Also Mr. B. J. Waterhouse, the Vice-President of the I.A. N.S.W., was appointed Hon. Secretary and Hon. Treasurer of the Federal Council for the same term. As long as Mr. Godsell remains the President the annual meetings of the Federal Council are to be held in Sydney.

Mr. Godsell will use his influence to secure recognition for the Institute and the Federal Council on the Federal Capital Advisory Board, and also to secure competition among private Architects for all public and monumental buildings both at the Federal Capital and throughout the States.

The G. Sydney-Jones Presentation.

The Institute generally held the opinion that the life-long services rendered to it by Mr. G. Sydney-Jones should be recognised, and that gentleman, having been consulted, graciously agreed to accept from the members the gift of his portrait in oils and of a Life-Membership. The presentation took place at the General Meeting in September, 1921, when ample evidence was afforded to the recipient of the affection and goodwill entertained for him by the members.

The portrait was the work of Mr. Norman Carter, and is considered to be one of his best efforts.

Examinations.

The candidates who passed in the 1921 Examinations were:—Mr. A. S. Armstrong (R.I.B.A. War Special), Mr. C. C. M. Whitley (R.I.B.A. Overseas), Messrs. S. J. Traill and S. J. Hurd (R.I.B.A. Intermediate), Messrs. A. Aley and S. Young Wai (I.A.N.S.W.). Three other candidates sat. The Examinations were held in the Technical College by the courtesy of Mr James Nangle, the Superintendent of Technical Education.

The Examiners for 1921 were Professor Leslie Wilkinson, Messrs. B. Hadley, Jack F. Hennessy and A. F. T. Somerville. The same gentlemen have agreed to act for 1922.

The question of raising the standard of the Examinations to the level of the R.I.B.A. is still under consideration.

The University and Technical College.

A conference was held between the Council of the Institute and the Superintendent of the Technical College and the Lecturer-in-Charge of the **Architecture Department** regarding closer co-operation between the Technical College and the University.

An Atelier for Sydney.

The Council, by letter to the Registrar of 27th October, 1921, directed attention to the necessity for an Evening Atelier at the University.

It is gratifying to be able to state that an Atelier for the study of advanced design has been established, and is to commence this year.

Local Government Act.

By gazettal on 9th November, 1921, the Building Ordinances Nos. 70 and 71 under the new Local Government Act became operative. These Ordinances are based upon the draft prepared by the Committee of the Institute, but revised, altered and amended by a conference called together by the Minister for the purpose.

Out of a total of eleven members, the Institute had two direct representatives at the Conference, namely, Messrs. J. Peddle and R. W. Pickering, and, besides, two members representing other bodies were Fellows of the Institute.

The Ordinances as gazetted are not in many respects just what the Institute's representatives wished, nor just what the representatives of any other organisation wanted, but they are the result of many months' strenuous and conscientious work, and the best compromise upon which the whole or a majority of the members of the conference could agree.

It is satisfactory to report that a permanent Advisory Committee has been appointed, to which matters connected with the Ordinances may be referred, and by which alterations thereto (if such are found necessary) will be recommended. Members of the Institute should remember that while inconsiderate fault-finding will produce no good results they can materially assist in perfecting the work of the conference by sending to the Under-Secretary, Mr. J. Garlick, for consideration by the Advisory Committee constructive criticism based upon their actual experiences when planning and building under the Ordinances.

The extent to which the provisions in the Act and these Ordinances protect the public, wherever such protection is necessary, and at the same time permit the greatest individual freedom consistent with such protection, will be the measure of their success; where they are found to fail in either purpose, or to unnecessarily increase building costs, amendments from time to time must be made.

Competitions.

The attention of Municipal and Shire Councils is being called to the Institute's Regulations for Architectural Competitions by means of printed post cards, which are posted to them twice annually. In several instances copies of the Regulations have been applied for.

Many Competitions have been dealt with by the Town Planning Housing and Competition Committee; for example, those at Burwood, Bathurst, Manly, Mosman, Hurstville, Ryde, Shoalhaven and Parramatta, and in some cases the Institute's Regulations have been adopted, as fully detailed in the Committee's Report appended hereto.

The Public Monuments Advisory Board amended its conditions of competitions at the Council's request to make them accord with the Institute's Regulations.

The A.I.F. Memorial.

A conference was held at the Town Hall on the 21st November, 1921, when it was resolved "That a Committee, consisting of Sir C. Rosenthal, Mr. E. F. McDonald, Mr. J. J. Garvan, Hon. W. Brooks, Dr. Mary Booth and Sir Alfred Meeks should report on the character of the Memorial, whether utilitarian or idealistic, and on the legality of appropriating the £60,000 already subscribed to other than a utilitarian purpose."

The result of the Committee's deliberations has not yet been announced.

Federal Capital Competition.

The views of the Federal Capital Advisory Board upon this subject were given by Mr. H. E. Ross (a member of the Board) on a recent occasion, and they were these:—"We are unanimous and emphatic in our attitude that all public buildings of the permanent and monumental class are to be the subject of Architectural Competition."

The Council will endeavour to make sure that a practical result follows this statement.

Evidence has been given recently by Professor Leslie Wilkinson to the Federal Public Works Committee upon the Federal Capital question.

Auckland War Memorial Competition.

Attention is called to this important competition, which is to close on 30th May, 1922. Particulars can be inspected at the Institute Office.

The Annual Dinner.

The Annual Dinner was held on 13th December, 1921, in the New Banqueting Hall of the Hotel Australia. It was graced by the presence of Sir Walter E. Davidson, K.C.M.G., who was in a most happy mood, and there were many distinguished guests from kindred and allied societies.

The function took the nature of a celebration of the Institute's efforts to obtain registration. One hundred and twenty-one members and guests attended.

New Premises.

The Institute will shortly be housed in comfortable quarters on the upper floor of the Royal Society's House, which the Council has agreed to lease at a rental of £200 per annum, as authorised by the General Meeting of Tuesday, 8th November, 1921.

These new premises will comprise three rooms, respectively 34ft. x 15ft. 3in., 16ft. x 15ft. 6in., and 16ft. x 8ft., which will afford accommodation for the Secretary and his Assistant, for Library, members' rendezvous, for ordinary meetings and facilities for country members.

The Library.

The following additions were made during the year:—

Masonry, Bricklaying and Plastering (Burn). Donor, Mrs. S. F. Pritchard.

How to Estimate (Rea). Donor, Mrs. S. F. Pritchard.

Specifications in Detail (Macey). Donor, Mrs. S. F. Pritchard.

Building Specifications (Leaming). Donor, Mrs. S. F. Pritchard.

Old Cottages and Farmhouses (Davie and Bauber). Donor, Mrs. S. F. Pritchard.

Commonsense Homes (Sills). Donor, Mrs. S. F. Pritchard.

Treatise on Architecture (Ashpitel). Donor, Mrs. S. F. Pritchard.

Book of Country Houses (Newton). Donor, Mrs. S. F. Pritchard.

Architectural Parallels (Sharpe). Donor, Mrs. S. F. Pritchard.

Book of Houses (Newton). Donor, Mrs. S. F. Pritchard.

Architectural Iron and Steel (Birkmire). Donor, Mrs. S. F. Pritchard.

Law of Fire Insurance (Colenso). Donor, Mrs. S. F. Pritchard.

School Architecture (Robson). Donor, Mrs. S. F. Pritchard.

Principles of Planning (Marks). Donor, Mrs. S. F. Pritchard.

High Office Buildings (Birkmire). Donor, Mrs. S. F. Pritchard.

Town Planning in Australia (Sulman). Donor, Mr. B. J. Waterhouse.

Building and Ornamental Stones of Australia. Donor, Mr. R. Leaver.

Old London Illustrated. Donor, Builder, Ltd.

Architectural Terra Cotta. Donor, Mr. W. H. Ifould.

Prints of Old English Newspapers. Donor, Mr. P. E. Ranclaud.

Sydney Technical College Handbook.

Cape Institute of Architects' Year Book.

Adelaide School of Mines and Industry Annual Report.

Berks, Bucks & Oxon Architectural Association Year Book.

The thanks of the Council were tendered to the various donors.

In addition to the above a complete set of the *Journal* has been bound for record purposes.

Periodicals and Exchanges were received as under:—

The Builder, *Journal of the R.I.B.A.*, *Journal of the Architectural Association*, *Architect Builder and Engineer* (Capetown), *Town Planning Review* *Liverpool University*, *Building* (*Journal of Association of Transvaal Architects and Natal Institute of Architects*). *Journal of the Society of Architects*, *Journal of the R.V.I.A.*, *Journal of the American Institute of Architects*, *Journal of the Japanese Institute of Architects*, *Concrete*, and the *American Architect*.

The Journal.

A fresh agreement has been entered into with the publishers whereby *Architecture* has become a Journal of proceedings. The change was made for business reasons, and the new agreement will be in force for two years from 1st October, 1921.

New Quarterly.

It is proposed to publish a new quarterly magazine of very high class to represent the Institute's aims and ideals, and to illustrate the architectural and artistic productions of its members and others.

Visits.

Visits have been paid to:—

Messrs. John Lysaght (Australia) Ltd. works at Newcastle.

The Broken Hill Proprietary Company's works at Newcastle.

The Australian Gaslight Company's works at Mortlake.

The Girls' High School, Moore Park.

The Wunderlich Tileries at Rose Hill, and Durabestos Works at Cabarita.

Several groups of the War Service Homes at Enfield, Belmore, Bexley and Sans Souci.

Students' Designing Club.

There was a series of six competitions and the subjects set were the R.I.B.A. problems of 1921, all interesting subjects allowing the greatest freedom in design.

The prizes offered amounted to the total sum of £25—1st prize, £15; 2nd prize, £7 10s.; and 3rd prize, £2 10s. The prizes to be awarded to the competitors gaining the most points during the session.

The various competitions were as follows:—

1. "A Villa with a Courtyard."
2. "An Open Wooden Stair for an Hotel."
3. "A Country Railway Station."
4. "Gymnasium and Swimming Bath."
5. "A Grand Opening to a Channel Tunnel."
6. "A Convalescent Home."

P.F.A. Site.

Representations have been made both to the Federal and State authorities regarding the resump-

tion of the P.F.A. site for National or State purposes.

Vaucluse House.

Assurances have been received from the Vaucluse Park Trust that any alterations made to this historic house will be in harmony with Wentworth's period.

G.P.O. Sydney Alterations.

Evidence was given by the President, Mr. G. H. Godsell, and by Professor Wilkinson before the Federal Public Works Committee upon these proposed alterations.

Tree Destruction.

Your Council has made efforts to prevent the destruction of trees along the Pitt Street frontage to the Central Railway Station.

Institute Endowment Fund.

By resolution of the Council on 9th February, 1922, an Endowment Fund was established, into which Mr. Godsell and Mr. Waterhouse respectively paid £10 each, being the refunds to them of the expenses incurred on their visit to Melbourne as delegates to the Federal Council. Mr. Godsell has also paid in £4/10/-, so that the Fund now stands at credit £24/10/-.

Pritchard Endowment Fund.

By resolution of the Council on 9th February, 1922, an Endowment Fund was initiated for the purpose of paying the expenses of educating the son of the late Mr. A. F. Pritchard. The Committee in charge comprises representatives of the Institute and of the Master Builders' Association, and of the Local Government Association, and Mr. B. J. Waterhouse is the Honorary Treasurer. Members of the Institute and Association will be given opportunity to contribute.

Westminster Abbey Fund.

The sum of £13/9/9 was handed to the Hon. Treasurer of the Fund on 27th October, 1921, being the aggregate of donations by individual members.

Scale of Charges.

The Institute's scale has been revised, and will be circulated for the consideration of members. Opportunity will be given to debate it at a General Meeting.

Levies.

By resolution of a general meeting held on 12th September, 1921, it was decided to add the amount of the Federal Levy, namely 2/6 per head and an Education levy of 5/- per head, to the subscriptions, of all Fellows. Also to add the Federal levy of 2/6 to the subscriptions of all Associates, and to leave the Education levy of 5/- optional.

Cricket Match.

The Annual Cricket Match with the Master Builders' Association was played on 9th March,

1921, and was won by the Architects by 46 runs on the first innings.

Conclusion.

This has been one of a series of epoch-making years, and amongst our many professional interests none is more vital than the success of the students, who will be the future architects in Australia. As far as our State is concerned, the students of today are fortunate in having splendid opportunities, which are open to all. These opportunities, fully availed of and supplemented by travel and practical experience, should produce architects of whom we shall be proud. Our country is one of the best, and given wise legislation and good seasons there should be ample opportunity for the present and future architects to do great things for our higher civilisation and progress.

G. H. GODSELL,

President.

JOHN J. LOUGH,

Secretary.

APPENDIX

Report of the Practice Committee.

It will be seen from the list of meetings held that the Practice Committee has had a very strenuous year. The Council referred many matters demanding research, or detailed information, to that Committee; in most instances its recommendations have been followed, and in every instance the opinion furnished has been most helpful to the Council when deciding upon its course of action.

Among the matters dealt with during the year by the Committee, the following reports and papers have been prepared for the Council:—

Draft revision of the Institute's Scale of Charges.

Draft Code of Ethics.

Report on awnings now in use in Sydney, for the West Australian Institute of Architects.

Report on advertising, with particular reference to the practice of advertising plans in course of preparation.

Report on fees to be charged for War Memorials.

Report on some matters of detail in connection with architects' fees, and on a letter from Messrs. Minter, Simpson, relative to these.

Report on "Conditions of Contract," submitted by Master Plumbers and Sanitary Engineers' Association.

Report on letter from the Boston Society of Architects with reference to the relations between architects and draughtsmen.

Report on "Specialisation" lecturette as to sub-division and headings.

The Committee also appointed a sub-committee to approach the Board of Water Supply and Sewerage with reference to built-in baths, with the result that the prohibition previously existing has been removed.

Attendances (18 Meetings).

Mr. H. Joseland (Chairman)	..	11
„ S. M. Mould	.. ..	15
„ H. C. Day	.. ..	11
„ J. S. Adam	.. ..	10
„ R. V. Minnett	.. ..	6
„ R. Keith Harris	.. ..	4
„ E. A. Scott (appointed 3/8/21)		2
„ S. G. Thorp (Hon. Sec.)	..	15

Report of the Town Planning and Housing and Competitions Committee

Thirteen meetings were called, two of which lapsed for want of a quorum.

A great deal of the session was devoted to consideration of various competitions. In many instances the help of the Institute had been sought and welcomed; unfortunately this was not always the case, and in a few instances the promoters had decided, in spite of all representation, to proceed on their own lines. In a few cases these were so entirely unsatisfactory that the Committee felt some action should be taken in the interests of the public, the promoters and the profession, and recommended to the Council that where conditions of competitions are sufficiently unsatisfactory to warrant it, steps be taken to prohibit members of the Institute from competing.

Among the conditions of competitions submitted for consideration were those for War Memorials at Bathurst, Burwood, Hurstville, Mosman and Auckland (N.Z.), a Town Planning Scheme for Glebe, a Band Stand at Manly and Memorial Hall at Hurstville, and it is gratifying to know that in several instances the Committee's recommendations were accepted and agreed to.

Unfortunately this was not the case in regard to the two last-mentioned, where all negotiations failed, and it was considered advisable to request members not to take part.

Mr. Race Lewis' proposed canal scheme for Sydney was discussed at several meetings.

In reference to the proposed alterations to the G.P.O., the Committee had recommended the resumption of the whole block, extending to King Street.

In reference to the P.F.A. building at North Sydney, which was destroyed by fire, the Committee recommended that action be taken to induce the authorities to resume the site.

The Committee drew the Council's attention to the constant ruthless destruction of trees in the suburbs, and recommended that certain kindred societies be invited to attend a conference to consider what steps, if any, should be taken to remedy this evil.

Attendances

Mr. A. W. Anderson (Chairman)	..	2
„ W. De Putron	.. ..	3
„ H. O. Jackson	.. ..	5
„ G. Sydney-Jones	.. ..	2
„ J. D. Moore	.. ..	10
„ S. A. Neave	.. ..	2
„ B. J. Waterhouse	.. ..	4
Prof. Leslie Wilkinson	.. ..	9
Mr. R. Keith Harris (Hon. Secretary)		13

Report of the Journal Committee

Attendances.

Mr. B. J. Waterhouse (Chairman)	..	9
„ R. K. Harris	.. ..	7
„ J. Barlow	.. ..	4
„ G. Sydney Jones	.. ..	4
„ L. C. McCredie	.. ..	6
„ N. Carter	.. ..	4
„ F. Glynn Gilling (Hon. Secretary)		9
„ R. W. Pickering	.. ..	2
„ H. C. Day	.. ..	3

During the Session the Council, on the recommendation of the Committee, decided to cancel the Institute Journal, *Architecture*, and substitute in place thereof *A Journal of Institute Proceedings*. An agreement was made with the publishers to this effect.

The Committee have under consideration a scheme to produce a high-class *Architectural Journal*.

The Committee advised Council on the various *Lecturettes* for the year.

INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES
Statement of Receipts and Expenditure, for Year Ending 31/12/21

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
To Bank balance	121	12 7	By Printing, stationery, and stamps	166	3 10
" Subscriptions	738	18 0	" Telephone charges	11	1 5
" Scale of charges, agreements, etc.	46	8 6	" Advertising	6	10 3
" Federal Levy	10	5 0	" Refunds	25	4 6
" R.I.B.A.	24	13 6	" Petty cash	68	2 9
" Exhibition	42	18 6	" Secretary's salary	278	10 0
" Trust a/c.	233	12 6	" Cricket match	20	3 0
" Cheque returned	7	7 0	" Exhibition a/c.	73	9 3
" Exchange	0	4 0	" Typewriting	26	19 1
" Subscriptions and Entrance Fees for 1922	7	14 6	" Technical College	5	5 0
" Dinner a/c.	1	5 0	" Legal costs	35	0 0
			" Rent of Rooms, hire of lantern, etc. ..	46	10 0
			" Moderators' fees	12	12 0
			" Articles of Association	35	0 0
			" Federal Levy	17	0 0
			" Cheque book, bank charges, exchanges,		
			stamps, etc.	4	2 0
			" Cheque returned	7	7 0
			" Bank balance	395	19 0
	1,234	19 1		1,234	19 1

Statement of Trust Account for Year Ending 31/12/21

	£	s. d.		£	s. d.
To Bank balance	182	0 5	By Institute Dinner	139	18 2
" Subscriptions and R.I.B.A. fees	166	11 0	" Refunds	28	8 6
" Federal Levy	7	6	" Westminster Abbey Fund	10	10 0
" Westminster Abbey Fund	10	10 0	" Board of Architectural Education	28	10 0
" Exhibition, 1921	42	11 0	" Bank fee, exchange, etc.	1	5 7
" Exhibition, 1922	5	5 0	" Cheque returned	3	3 0
" Exhibition contributions	15	13 6	" General Fund Exhibition	42	18 6
	63	9 6	" General Fund—New Members	233	12 6
" Dinner (£10, 1920, Dinner)	142	0 6		276	11 0
" Pritchard Trust	2	0 0	" Exhibition	15	13 6
" Cheque returned	3	3 0	" Bank balance	66	2 2
	570	1 11		570	1 11

Liabilities and Assets 31/12/21

	£	s. d.		£	s. d.
To Credit balance	888	15 0	By Unpaid Subscriptions	192	16 0
			" Furniture, books, etc.	300	0 0
			" Balance at Bank	395	19 0
	888	15 0		888	15 0

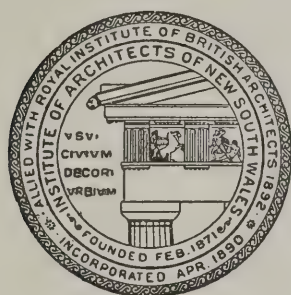
D. T. MORROW Hon. Treasurer

Audited and found correct,
17/2/'22.

GEO. W. DURRELL
G. L. GRANT,
Hon. Auditors

ARCHITECTURE

THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



APRIL 15TH
1922

VOL 11. No. 4

PRICE ONE SHILLING

INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

MINUTES OF AN ORDINARY GENERAL AND ANNUAL GENERAL MEETING

*Held at the Royal Society's Hall, 5 Elizabeth Street, Sydney,
on Tuesday, March 14, 1922.*

The Ordinary Meeting was opened at 7.30 p.m., when Mr. H. Venables Vernon presided. The minutes of the General Meeting of 14th February, 1922, were taken as read and confirmed.

The business of the meeting was the election of Mr. Rodney Howard Alsop, A.I.A., F.R.I.B.A., of 352 Collins Street, Melbourne, as a Fellow of the Institute. Fifty-six ballot papers had been received. Messrs. J. Peddle and A. F. T. Somerville acted as Scrutineers, and Mr. Alsop was duly elected.

Mr. H. Lockley spoke upon that Library Rule which imposed a fine of 6d. per day upon members who kept books out after the prescribed period of 14 days. It was resolved to recommend to the Council that the fine be reduced to 1d. per day, or, failing the Council's action, that a resolution favouring the reduction should appear on the business paper for the next General Meeting in the names of Messrs. H. Lockley and A. F. T. Somerville.

The Annual General Meeting opened at 8 o'clock p.m., with Mr. G. H. Godsell (President) in the chair, and forty-one members in attendance.

The minutes of the last Annual Meeting held on 15th March, 1921, were reported to be already confirmed, and were not re-read.

Apologies for absence were received from Mr. G. Sydney Jones, Mr. H. C. Day, Mr. E. B. Wilshire, Mr. H. McB. Gardiner-Garden, and Mr. J. S. Adam.

The Annual Report was read by Mr. R. W. Pickering (Hon. Secretary), and the statement of accounts and balance-sheet by Mr. D. T. Morrow (Hon. Treasurer).

The adoption of the report and balance-sheet was moved by Mr. S. Robertson, seconded by Mr. J. Peddle, and carried unanimously.

(The report and balance-sheet appear in the March issue of *Architecture* on page 42.)

The President returned thanks for the hard and able work performed by members both in Council and Committee and said that the assistance given by the Vice-President, Mr. B. L. Waterhouse, and by the Secretary, Mr. John J. Lough, had made it possible for him to occupy the presidential chair. He would be deeply sorry if, as

the result of the ballot to be taken for Councillors, he should be called upon to part with any one of the gentlemen who had worked with him for the past year. His only reason for remaining in office for another year was that he desired to hand over the charge of the Institute to Mr. Waterhouse, and that gentleman was not prepared to take the responsibility on his shoulders just now, but would do so if called upon in 1923.

Mr. Waterhouse responded for himself and the Council. He said it had been a pleasure to work with Mr. Godsell, and that he recalled no Council where such happy co-operation had prevailed. This satisfactory state was due entirely to Mr. Godsell's splendid spirit and example. No one could have done more for the Institute than the President had done. But it should be remembered that the support of each member of the Institute was wanted, and every member should be prepared to devote some of his time and interest to the affairs of the Institute.

Mr. Waterhouse then spoke on the Pritchard Trust, and said that the late Mr. A. F. Pritchard had devoted so much of his time to the affairs of the Institute that he must have been at the end considerably out of pocket. A total sum of £400 was wanted for the education of the deceased's three children, of which £280 was promised, and of this amount £80 had been subscribed. He asked those who had already promised to send in their cheques without delay, and those who had not yet promised to join in the movement at their earliest convenience.

The ballot was then taken for members of the Council for the ensuing twelve months, Messrs. J. Peddle and H. Venables Vernon being the Scrutineers, and it resulted as follows:—

President: George Herbert Godsell.

Vice-President: Bertrand James Waterhouse.

Honorary Secretary: Robert White Pickering.

Honorary Assistant Secretary: Harry Cooper Day.

Honorary Treasurer: David Thomas Morrow.

Members of Council (Fellows): John Shedden Adam, Frederick Glynn Gilling, Stuart Mill Mould, Hugh Venables Vernon, Leslie Wilkinson.

Members of Council (Associates): Royston John Keith Harris, Leith Cecil McCredie.

The President returned thanks for the re-election of the Council without alteration.

Mr. J. D. Moore spoke strongly on the spoilation of Hyde Park by operations for the City Railway, and was supported by Mr. B. J. Waterhouse, Mr. A. F. T. Somerville, Mr. R. Keith Harris, Mr. J. A. Kerr and Professor Wilkinson. Mr. John Barr added that the matter of spoilation of Wynyard Square by the Railway might also have attention.

The President promised that representation as to Hyde Park should be made in the proper quarter at the earliest opportunity, and that the whole question should be dealt with by a small Committee.

The President announced that Mess.s. Richard Shute and Walter White were no longer members of the Institute.

The President announced that members were invited to visit the mill of Messrs. Meggitt Ltd. at Parramatta on the afternoon of Wednesday, 29th March. Those who intended to make the trip should give in their names to the Secretary.

Short statements were made in answer to questions upon the Endowment Fund, Library, Exhibition, Architects Act, the Atelier, the Parramatta Markets Competition, and the Scale of Charges.

The meeting terminated at 9.20 p.m.

STUDENTS' DESIGNING CLUB

Results of Final Competition.

6th April, 1922.

Hope.

This solution of the problem is a very good one; the main rooms are well placed and form the centre of a very interesting plan. The lavatories opening directly off the wards would be better if they were separate blocks connected by a short passage, which could be easily ventilated. Perhaps some additional verandah space would be an advantage.

The elevations are simple and would quite effectively express the type of building they are intended for; they also outwardly express the form of the plan.

Forty-Five

is a fairly good plan though it seems rather cramped, the living rooms seem too small though this is made up for in additional verandah, and balcony space has been over done, and entirely prevents direct sunlight penetrating any of the wards except very early in the morning or the late afternoon. Direct sunlight is essential in rooms of a building of this nature from a hygienic point of view.

The common dining-room has no outlook at all which is quite a defect, and the servants' quarters are inadequate.

The elevations are rather more expressive of a

town building, say, a hotel in a northern city, than a convalescent home on the hills overlooking the city.

The Draughtsmanship in both cases is good and effectively give the information required without useless effect, but in no case are the points of the compass given, a most essential thing to show and consider when studying a plan of any sort.

Marks.—

Hope: 80.

Forty-five: 50.

The complete results and name of prize-winners will be published in our next issue.

The Howard Joseland Students' Sketching Competition.

The following are the winners of this competition:

1st: George Rae.

2nd: Eric Thompson, W. R. Laurie.

The winning drawings are on view at the Architectural Exhibition.

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
Auckland Citizens' War Memorial ...	30/6/22	Approved
N. S. War Memorial ...	—	Approved.

MEMBERSHIP OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

PARTICULARS OF THE QUALIFICATION FOR ASSOCIATESHIP

Introductory.

The Royal Institute of British Architects desires to obtain for all those entering the profession a systematic course of education tested by progressive examinations, the passing of which forms the primary qualification for admission to its class of Associates. Associateships being in general the entrance class of membership, the Institute requires as the qualification for it evidence of a sound general and technical education. It has, therefore, encouraged the foundation and growth of schools of architecture in various parts of the country, and when these schools have reached a standard approved by the Institute certain of their courses have been "recognised" as affording evidence, on the part of those who have successfully graduated in them, that they have reached the standard of general and technical education required, or have attained a stage towards it.

It is the desire of the Institute, as recommended by the Board of Architectural Education, that students within reach of such Schools should avail themselves of the opportunities these institutions afford, and take up the architectural courses provided, rather than submit themselves for the examination without such recognised training. A list of these Schools, with the degree of exemption they afford, will be found in the Sections II. and III. dealing with the Intermediate and Final Examinations.

Particulars of Examinations.

To obtain the Associateship of the R.I.B.A. the candidate has normally* to pass three stages: he must qualify

- I. As a Probationer.
- II. As a Student.
- III. As an Associate.

SECTION I.—QUALIFICATION AS PROBATIONER.

A Certificate from one of the "Recognized" Schools of Architecture, countersigned by the external examiner, to the effect that the candidate has passed an Entrance Examination in the following subjects:—

Elementary English Composition,
Arithmetic, Algebra, Geometry,
Mechanics (or Physics),
History,

One Language other than English, and
Drawing,

will be accepted as exempting the candidate from any further tests to qualify him to be registered as a Probationer, on making application on the official form and payment of the registration fee of four guineas.

Every other applicant desirous of qualifying for Registration as Probationer R.I.B.A. must make an application on the official form, to be filled up as directed thereon, and to be accompanied by an admission fee of four guineas, which will be returned should the application be refused.

Candidates are required to produce evidence of their general education satisfactory to the Council of the Royal Institute of British Architects. Such evidence should be a Certificate of passing some recognized Public Examination, a School Leaving Certificate, or, in cases where special circumstances have prevented a candidate from acquiring such Certificate, a letter from the Headmaster of the candidate's School, certifying that he has reached the standard of such examinations in the following subjects:—

Elementary English Composition,
Arithmetic, Algebra, Geometry,
Mechanics (or Physics),
History, and

One language other than English.

They must also produce drawings showing that they possess an elementary knowledge of Geometrical and Perspective Drawing and also Freehand Drawing.

The name of every successful candidate is entered on the Register of Probationers of the Royal Institute of British Architects.

SECTION II.—QUALIFICATION AS STUDENT.

The Intermediate Examination.

Para I.—Exemptions.

(a) *Recognized Schools.*

Probationers who have obtained any of the following qualifications may be exempted from sitting for the Intermediate Examination and be admitted as Students R.I.B.A. on making a formal application and paying the fee of Five Guineas, provided that the work done by them during the Session be submitted to and approved by the Board of Architectural Education as Testimonies

* See Appendix for particulars of the Special Examination and Examinations in the Dominions and Colonies.

of Study, or has been previously examined and approved by the External Examiners.

1. *London.*

(a) Architectural Association.
Certificate of 3 years' course.

(b) London University.

First-class Certificate of 3 years' course in the School of Architecture, or first 4 years of Degree Course and Part I. of B.A. Exam.

2. *Liverpool.*

First-class Certificate of 3 years' course in Architecture at Liverpool University.

3. *Glasgow.*

Diploma or Certificate of the Glasgow School of Architecture.

4. *Manchester.*

First-class in Terminal Certificate Examinations of Final Year, or on passing a University Degree Examination in Architecture at the Victoria University.

5. *Cambridge University.*

A Pass in the B.A. Examination in Architectural Studies; or in the Special Examination in Architectural Construction together with the Special Examination in Architectural History.

6. *Sheffield.*

B.A. with Honours in Architecture or Diploma in Architecture at end of 5 years' course at the University, or
First-class Certificate at end of 3 years' course.

7. *Edinburgh.*

Diploma of combined course in Architecture at Edinburgh College of Art and the Heriot-Watt College.

8. *Aberdeen.*

Certificate of 2 full years at the Robert Gordon Technical College, supplemented by 3 years' work in evening classes.

9. *Cardiff.*

Certificate of full time day course for 3 years with first-class marks.

10. *Leeds.*

Certificate of 3 years' Architectural Course at the Leeds School of Art.

Note.—It is laid down that in all schools thus recognized for the purposes of the Intermediate Examination, a written examination to the approval of the external examiner is to be held in (1) History of Architecture, (2) Applied Construction, (3) Theoretical Construction; and further, that such

schools submit annually for exhibition at the R.I.B.A. one design from each student who is exempted.

(b) *Imperial and Foreign Schools.*

Students who can produce certificates that they have passed with distinction through a full course of study (on lines approved by the Institute) in a Dominion, Colonial, or Foreign School to the satisfaction of the respective Professors, may, at the discretion of the Board, be recommended to the Council for exemption from the whole or any part of the Intermediate Examination.

In this connection the following schools provide courses which are recognised as carrying exemption, on the usual terms, from the Intermediate Examination:—

1. *Canada.*

McGill University
Toronto University
3 years' course.

2. *India.*

Bombay School of Art.
Certificate of 5 years' course.

See also Appendix II. *Overseas Examinations* footnote.

(c) *Partial Exemption.*

Partial exemption may be granted to students who produce evidence of having passed approved examinations in certain subjects in Schools of University rank—viz.: The Principal Styles and General History of Architecture, and the Purpose of Architectural Features in relation to the Buildings in which they occur; Theoretical Construction, including Stresses and Strains. Students who are thus exempted must submit Testimonies of Study as specified and must pass the Intermediate Examination in the following subjects—viz.: Simple Applied Construction and Elementary Design and the Properties and Uses of Ordinary Building Materials. Design: Dealing with Simple Subjects.

Para. 2.—Description of Examination.

An Examination (Written, Graphic, and Oral) of Probationers is held by the Royal Institute, and some of the non-Metropolitan Societies allied thereto, once a year, in the month of June, in accordance with the particulars given on the official form.

A Probationer R.I.B.A. who has attained the age of at least 19 years, and who is desirous of qualifying for registration as Student R.I.B.A., must make an

application on the official form,* to be filled up as directed thereon; and to be accompanied by an admission fee of Five Guineas, which will be returned should the application be refused. He must also send with his application "Testimonies of Study" (see para. 4 below), accompanied by a certificate from a member of the Royal Institute, or other person of recognized position, that the Probationer is a proper person to be admitted to this Examination, and that the Testimonies of Study he submits are his own work.

Para. 3.—The Testimonies of Study.

The Testimonies of Study† required from Probationers R.I.B.A. must consist of eight sheets of drawings (half double-elephant—*i.e.*, 27 inches by 20 inches), neatly and carefully finished. The subjects of the eight sheets of drawings must be as follows:—

- 1 and 2. Two sheets showing the application of one or more of the orders of Architecture to a building. A general drawing of the Building to be given on one sheet with details on the second.
3. One sheet of details of Classic Ornament from the round, or one sheet of Mediæval Ornament—freehand drawing from the round.
- 4 and 5. Two sheets of measured drawings of an existing building or portion of a building, to be selected by the candidate, with the plottings and sketches. Probationers who are Architectural Students of the Royal Academy are permitted in lieu of the Testimonies of Study Nos. 1 to 5 above specified, to submit for the approval of the Board of Architectural Education their work done in and for the Royal Academy School provided that the drawings so submitted comprise studies applicable to sheets Nos. 4 and 5, whether prepared for the Royal Academy or otherwise.
- 6, 7, and 8. Three sheets of working drawings of a building of moderate dimensions, showing clearly the construction of floors, roofs, joinery, etc. The general drawing to be drawn to the scale of 8 feet to 1 inch with $\frac{1}{2}$ inch and full size details.

Note.—Drawings prepared in any of the above

"Recognized" Schools by Probationers R.I.B.A. may be submitted by such Probationers in lieu of the Testimonies of Study above set out, and if the work be approved by the Board, the candidates will be admitted to the Examination.

* * *

Each of the eight sheets must be carefully finished as a complete work and bear the name of the candidate. They must be delivered flat, in a portfolio 30 inches by 22 inches.

The carriage of the Testimonies of Study, Etc., to and from the office of the Institute, and all expenses incidental thereto, must be defrayed by the candidate. They will be delivered on demand to any person authorised by the candidate to receive them, but the Royal Institute will not incur any expense in returning them. Due care will be taken of such Testimonies of Study, Etc., but the Royal Institute will not be responsible for any loss of or damage to them while they remain in its keeping or are in transit to or from the Royal Institute. All Relegated Candidates are required to bring their original Testimonies of Study to the Oral Examination.

Para. 4.—Details of Examination.

The Examination, which is known as the Intermediate, embraces the following subjects:—

- i. Two Papers on the Principal Styles and General History of Architecture, and the Purpose of Architectural Features in relation to the Buildings in which they occur.
- ii. Two Papers on Construction: 1. Simple Applied Construction in Elementary Design and the Properties and Uses of Ordinary Building Materials; 2. Theoretical, including stresses and strains.
- iii. One Paper on one of the following subjects:—
 - (a) Historical Architecture—showing knowledge of one of the following periods, to be selected by the candidate: (a) Greek and Roman; (b) Byzantine and Romanesque; (c) French and English Gothic; (d) Italian, French, and English Renaissance.
 - (b) Mathematics and Mechanics—Algebra, up to and including the binomial theorem; The use of the Slide Rule; Plane Trigonometry, including the Solution of Triangles; Descriptive Geometry, including the Mensuration of simple Plane and Solid Figures; Simple Conic Sections treated geometrically; General Statics and Dynamics, including graphic statics.

* To be obtained at the Office of the Institute, and to be sent in, with the Testimonies of Study, on the dates specified in the *Almanac*.

† In order to test the Probationer's knowledge of what he has drawn and described in his "Testimonies of Study," they are brought up at the Oral Examination, when he is required to answer questions respecting them.

(c) Design, dealing with simple subjects.

Para. 5.

Applicants unsuccessful at their first sitting may present themselves at one subsequent examination without further fee; should they then fail to pass, a fresh fee must be paid for each subsequent attempt.

Para. 6.—*Registration as Student.*

The results of these Examinations are reported to the Council by the Board of Architectural Education, who recommend as to the fitness of the candidates for admission as Students, and return the names of those who pass in order of merit. On the approval of such commendations the successful candidates are registered as Students, and their names and addresses are published in the *Journal* of the Royal Institute, and also in the *Kalendar*.

A fee of 10s. 6d. is payable by all Students within two months of registration, and this fee is renewable on the 1st January each year. Students registered after the 31st October in any year, and having paid their first registration fee are not required to pay a further fee before the 1st day of January twelvemonth subsequent to their registration.

Every Student R.I.B.A. has the privilege of using the Library and Loan Collection of Books, and of admission to the Ordinary Meetings of the Royal Institute; and on successfully passing the Final Examination (to be passed by Students who have attained the age of at least 21 years) he is qualified, subject to the provisions of Section 8 of the Charter, for candidature as Associate R.I.B.A.

SECTION III.—QUALIFICATION AS ASSOCIATE.

The Final Examination.

Para. 1.—*Exemptions.*

(a) *Recognized Schools.*

The following resolution of the Council permits exemption from its Final Examination, with the exceptions and safeguards therein stated, under certain conditions to Schools of Architecture.

"The Council of the Royal Institute of British Architects will, subject to proper safeguards, recognize for exemption from its Final Examination (with the exception of that portion of the Examination which deals with Professional Practice) such Schools as have set up a five years' Diploma or Degree course which the Council can approve, provided that in judging all designs submitted for the Diploma or Degree there be two External Examiners, approved by the Council, with power of veto."

Such courses have been established by

The Architectural Association, London,
Liverpool University,

Glasgow School of Architecture,
and the exemption above defined is granted to these schools.

Note.—It is laid down that in all schools thus recognized for the purposes of the Final Examination, an examination to the approval of the External Examiner is to be held in (1) Design, (2) Advanced Applied Construction, (3) Advanced Theoretical Construction (including structural steel and ferro-concrete), (4) Materials, (5), Sanitation; and further, that such schools submit annually for exhibition at the R.I.B.A. four designs (one showing construction) from each student exempted.

(b) *Special Exemptions.*

The Council has decided to exempt the holder of the Rome Scholarship from the Final Examination under the usual conditions at the conclusion of his three years' study abroad, and the Henry Jarvis Student after his two years' study abroad, provided that their work is approved by the Board.

Para. 2.—*Description of Examination.*

An Examination (Written, Graphic, and Oral) of Students of the Royal Institute of British Architects is held by the Royal Institute once a year, in the month of June, in accordance with the particulars given on the official form to be obtained at the Institute.

A Student R.I.B.A. who has attained the age of at least 21 years, and who is desirous of qualifying for candidature as Associate R.I.B.A., must make an application on the official form, to be filled up as directed thereon, and to be accompanied by a remittance of Six Guineas, which will be returned should the application be refused. He must also send with his application four accepted "Problems in Design," accompanied by a certificate from a member of the Royal Institute, or other person of recognized position, that the Student is a proper person to be admitted to this Examination.*

Para. 3.—*Problems in Design.*

Alternate Problems in Design, set for candidates by the Board of Architectural Education, will be published every six months in the *Journal* of the Institute and the professional journals. Every candidate will be required to submit Designs in answer to at least four of these problems, one of which must be a constructional problem. The Designs, when they have been submitted to and approved by the Board, will be considered as qualifying the Student to enter for the Examination. The

* The Council has decided to allow candidates other than British subjects who wish to obtain evidence that they have obtained the status, though not the rank, of an Associate of the Royal Institute, to sit for the Final Examination, and in the event of their passing, to furnish them with a certificate to that effect.

Designs so submitted and approved will be marked by the Examiners. Candidates who have been awarded the Soane Medallion or the Tite Prize, or who have received a Certificate of Honourable Mention in either of these Competitions, may submit in place of the aforesaid Designs their Soane or Tite Designs and receive marks for the same. Non-premiated designs in these Competitions may be submitted to the Board for approval in lieu of *one* of the Problems in Design. Designs prepared at the Royal Academy Ateliers, and also at the "Recognised" Schools may be submitted for approval by candidates for admission to the Final Examination in lieu of the same number of R.I.B.A. Problems in Design. Students in the Royal Academy School may submit in lieu of the alternative Problems in Design, the Designs made by them at the Royal Academy, provided that the same are approved and initialled by the visitor.

The carriage of the Problems in Design to and from the office of the Royal Institute, and all expenses incidental thereto, must be defrayed by the owners. They will be delivered on demand to any person authorised by the owner to receive them, but the Institute will not incur any expense in returning them. Due care will be taken of the drawings, but the Royal Institute will not be responsible for any loss of or damage to them while they remain in its keeping or are in transit to or from the Royal Institute. All relegated candidates must bring their Problems in Design to the Oral Examination.

Para. 4.—Thesis.

The Candidate must submit a Thesis showing advanced and individual work, and it is suggested that the Thesis should deal with one only of the following subjects:—

1. *Historical Architecture*—implying as far as possible the direct study of actual historical buildings.

2. *Science, as applied to Buildings*.—By this is intended a special study of an application of science to definite problems of building, such as acoustics, electrical or engineering requirements, or a critical essay on recent developments in methods of building.

3. *Design, including Decoration*—such as a study in Civic Monumental, or Decorative examples or other types of architectural design.

The subject selected for the Thesis is to be notified for the approval of the Board four months before the date of the Examination, and the Thesis itself is to be submitted four weeks before that date. The Thesis, which may be either an illustrated essay or a design with a detailed report, will be assessed by

Examiners specially appointed for the purpose, who will also examine the candidate orally in his Thesis if necessary. It is open to candidates to obtain distinction in the advanced work, and such distinction will be appended to the candidate's name in the *Kalendar*. This mark of distinction will only be given to candidates who pass the examination at one sitting.

To obtain distinction the candidate's Thesis must show some original work and deductions of value. Mere text-books extracts, devoid of reasoned original comment, will not be regarded by the Examiners as sufficient to merit pass marks.

Where the candidate submits an analytical criticism of existing buildings, unless the original rough sketches used for taking dimensions are attached, it will be assumed that such drawings have not been plotted to scale from actual measurements.

Photographs have comparatively little value, unless shown to be specially taken.

Essays submitted in competition for the Royal Institute Silver Medal may be sent in as the Thesis.
Para. 5.—Details of Examination.

The Examination is divided into two parts which may, if the candidate so desires, be taken separately, at an interval of not more than one year:—

Part I.

Subject A.—Design.

Part II.

Subjects BI. and BII	Construction.
„ C.	Hygiene.
„ D.	Building Materials.
„ E.	Ordinary Practice of Architecture, Etc.
„ F.	Thesis.

Candidates who wish to take the Examination in two parts must give notice of their intention when submitting their application.

Para. 6.

The Student who successfully passes the Final Examination becomes qualified, subject to the provisions of Section 8 of the Charter, for candidature as Associate of the Royal Institute of British Architects; he receives in due course a notification to that effect, and his name is published in the *Institute Journal*. The Ashpitel Prize is awarded to the Student who most highly distinguishes himself in the Final Examinations held during the year.

Applicants unsuccessful at their first sitting may present themselves at one subsequent Examination without further fee. Should they then fail to pass, a fresh fee must be paid for each subsequent attempt.

All Relegated Candidates are required to bring

their Problems in Design to the Oral Examination.
APPENDICES.

- I.—*Particulars of the Special Examination.*
II.—*Particulars of Examinations in the Dominions and Colonies.*

I.—SPECIAL EXAMINATION.

To Qualify for Candidature as Associate R.I.B.A.
[For applicants exempted, by permission of the Council from the Preliminary and Intermediate Examinations, and from submitting Testimonies of Study.]

The attention of architects in practice, not less than 25 years of age, and of chief assistants over 30 years of age, who may contemplate applying for admission to the Royal Institute of British Architects, is directed to the Regulations of the Special Examination qualifying for candidature as Associate, which is held once a year, in the month of June, in accordance with the particulars given on the official Application Form.

Architects in practice, and chief assistants as above stated, who desire to be admitted as Associates, can be exempted from passing the Preliminary and Intermediate Examinations, and from sending in "Testimonies of Study." They can be admitted, by resolution of the Council in each case, to a Qualifying Examination (namely, the Final of the three Examinations), which is conducted with especial regard to the requirements of such architects, their professional works and position being duly taken into account by the Board of Architectural Education.

Prior to the applicant's admission to the Examination, Probationary Work must be submitted to, and approved by, the Council in London.

Such Probationary Work must consist of the working drawings of a building, executed or otherwise, of the applicant's own design, with a perspective view (not necessarily of that building), and a drawing of some ornament from the round. Photographs of the building may also be sent.

All practitioners of Architecture who have been in active exercise of their profession for twelve years are exempted from sending in Probationary Work. Due care will be taken of the probationary work submitted by applicants, but the Royal Institute will not be responsible for any loss of or damage to the drawings while they remain in its keeping, and applicants are required to remove them immediately after their examination.

The candidate must submit a Thesis showing advanced and individual work, and it is suggested that the Thesis should deal with one only of the following subjects:—

1. *Historical Architecture*—implying as far as possible the direct study of actual historical buildings.

2. *Science, as applied to Building*.—By this is intended a special study of an application of science to definite problems of building, such as acoustics, electrical or engineering requirements, or a critical essay on recent developments in methods of building.

3. *Design, including Decoration*—such as a study in Civic Monumental, or Decorative examples or other types of architectural design.

The subject selected for the Thesis is to be notified for the approval of the Board four months before the date of the Examination, and the Thesis itself is to be submitted four weeks before that date. The Thesis, which may be either an illustrated essay or a design with a detailed report, will be assessed by Examiners specially appointed for the purpose, who will also examine the candidate orally in his Thesis if necessary. It is open to candidates to obtain distinction in the advanced work, and such distinction will be appended to the candidate's name in the *Kalendar*. This mark of distinction will only be given to candidates who pass the examination at one sitting.

To obtain distinction the candidate's Thesis must show some original work and deductions of value.

Mere text book extracts, devoid of reasoned original comment, will not be regarded by the Examiners as sufficient to merit pass marks.

Where the candidate submits an analytical criticism of existing buildings, unless the original rough sketches used for taking dimensions are attached, it will be assumed that such drawings have not been plotted to scale from actual measurements.

Photographs have comparatively little value, unless shown to be specially taken.

Essays submitted in competition for the Royal Institute Silver Medal and Twenty-five Guineas may be sent in as the Thesis.

A fee of Ten Guineas for the Special Examination must be paid by each applicant on sending in his formal application, which will be returned should the application be refused.

Applicants unsuccessful at their first sitting may present themselves again within twelve months without further fee; should they then fail to pass, a fresh fee must be paid for each subsequent attempt.

On passing the Examination, the applicant will be qualified, subject to Section 8 of the Charter, for candidature as Associate.

The names of those who pass are returned alphabetically, and they are at once informed thereof, with a view to their presenting themselves for election as Associates—the entrance fee to which class is Four Guineas and the annual subscription Three Guineas. Should an applicant not be passed by the Board he will be informed of the fact, but the names of the unsuccessful candidates are not announced.

Applicants availing themselves of these special concessions are not eligible for the Ashpitel Prize.

II.—OVERSEAS EXAMINATIONS.

To Qualify for Candidature as Associate R.I.B.A.

Architects of not less than 25 years of age working overseas, either as Architects in Practice or as Assistants, can be admitted to the "Special Examination" qualifying for candidature as Associates, which shall be held at such overseas centres as the Council may from time to time determine.

Prior to the applicant's admission to the Examination, Probationary Work must be submitted to, and approved by, the Council in London.

Such Probationary Work must consist of the working drawings of a building, executed or otherwise, of the applicant's own design, with a perspective view (not necessarily of that building), and a drawing of some ornament from the round. Photographs of the building may also be sent.

All practitioners of Architecture who have been in active exercise of their profession for twelve years are exempted from sending in Probationary Work.

Probationary Work must be forwarded to London at the expense of the applicant, but will be returned to him at the expense of the Institute.

Due care will be taken of such Probationary Work, but the Royal Institute will not be responsible for any loss of or damage to the drawings while they remain in its keeping, or are in transit from the Royal Institute.

The Candidate must submit a Thesis showing advanced and individual work, and it is suggested that the Thesis should deal with one only of the following subjects:—

1. *Historical Architecture*—implying as far as possible the direct study of actual historical buildings.

2. *Science, as applied to Building*.—By this is intended a special study of an application of science to definite problems of building, such as acoustics, electrical or engineering requirements, or a critical essay on recent developments in methods of building.

3. *Design, including Decoration*—such as a study

in Civic, Monumental, Decorative, or other branch of architectural design.

The subject selected for the Thesis is to be notified for the approval of the Board six months before the date of the Examination, and the Thesis itself is to be submitted four weeks before the same date. The Thesis, which may be either an illustrated essay or a design with a detailed report, will be assessed by Examiners specially appointed for the purpose, who will also examine the candidate orally in his Thesis. It is open to candidates to obtain distinction in the advanced work, such special distinction to appear in the *Kalendar*.

To obtain distinction the candidate's Thesis must show some original work and deductions of value.

Mere text book extracts, devoid of reasoned original comment, will not be regarded by the Examiners as sufficient to merit pass marks.

Where the candidate submits an analytical criticism of existing buildings, unless the original rough sketches used for taking dimensions are attached, it will be assumed that such drawings have not been plotted to scale from actual measurements.

Photographs have comparatively little value, unless shown to be specially taken.

Essays submitted in competition for the Royal Institute Silver Medal and Twenty-five Guineas may be sent in as the Thesis.

A fee of Ten Guineas for the Special Examination must be paid by each applicant on sending in his formal application. Should an applicant be admitted and pass, he will be qualified, subject to Section 8 of the Charter, for candidature as Associate.

The names of those who pass are returned alphabetically, and they are at once informed thereof, with a view to their presenting themselves for election as Associates—the entrance fee to which class is Four Guineas and the annual subscription Three Guineas. Should an applicant not be passed by the Board, he will be informed of the fact, but no public notice is taken thereof.

Candidates unsuccessful at their first sitting may present themselves once more for examination without further fee. Should they then fail to pass, a fresh fee will be required for each subsequent attempt.

Note.—The Overseas Allied Societies are empowered to prepare the necessary questions and conduct the Intermediate and Final Examinations once a year at such time as may be convenient to them, the questions and the answers and drawings prepared by the candidates to be sent to the Board with their marks. The passing or relegating of the candidates is decided by the Board.

VISIT TO MESSRS. MEGGITT LIMITED'S MILL AT PARRAMATTA

Members of the Institute of Architects of New South Wales paid a visit, by invitation, on Wednesday, 29th March, to the linseed oil mill of Messrs. Meggitt Ltd. at Parramatta.

The Institute party consisted of Mr. H. Joseland, Mr. J. J. Copeman, Mr. B. Hadley, Mr. H. O. Jackson, Mr. G. L. Grant, Mr. J. E. Campbell (Fellows), Mr. A. Lanyon Clark, Mr. H. A. Maclean, Mr. A. H. Martin, Mr. C. Mack Walker, Mr. F. P. Ryan, Mr. E. B. Wilshire (Associates), Mr. H. C. Beaver (Student), Mr. John J. Lough (Official Secretary).

Messrs. Meggitt Ltd. were represented by Mr. R. H. W. Fraser (Chairman), Mr. J. O. Meeks (Director), Mr. S. W. Phillips (Director), Mr. Alfred Wunderlich (Director), Mr. C. D. Howes (Acting General Manager), Mr. F. Cooke (Sales Manager), Mr. J. A. Smith (Mills Manager), Mr. R. McMillan (Senior Salesman).

The Institute party left the rendezvous at Martin Place at 2 p.m. sharp, and were taken by the Company's motor cars to Parramatta. An inspection of the works commenced immediately upon arrival, and the following is a description of the success of linseed oil manufacture (supplied by the Company).

Linseed oil is obtained from the seeds of the flax plant, which is grown extensively in the following countries: Argentina, India, U.S.A., Canada and Russia; and to a lesser degree in Australia and New Zealand.

The percentage of oil obtained from a given variety of seed cannot be said to be constant, as the yield is influenced by the conditions of soil, climate, ripeness, seasons, etc. The seed used for pressing is usually that which has been harvested from two to six months.

Manufacture.—As the seed is received at the mill, it is freed from large impurities by screening before being elevated into silos, where it is stored ready for use. From the silos it is first conveyed to a cleaning machine, which removes all impurities before passing to the rolls for crushing. The rolls crush the seed into meal, and in this form it is passed over to steam-jacketed kettles to be tempered. This branch of the process has to be most carefully supervised, as everything depends on the heating and steaming to which the crushed seed is subjected. The heating and steaming assists in facilitating the flow of oil in the presses.

When the meal is sufficiently tempered, it is taken from the kettles and moulded into cakes, which are placed in presses. Pressure of two tons to the square inch is now applied and the oil flows from the cakes into troughs, through which it is passed over into tanks for refining.

The first process to which the freshly extracted oil is subjected is filtration, which removes any particles of meal which may be left in suspension. After filtration, the oil flows to large tanks, where it remains undisturbed for a period of three months, protected from dust, but exposed to as much light as possible to assist maturing under ideal conditions.

At the end of three months, this oil is drawn, and again filtered through double filter cloths of a very fine texture, which experience has taught us is absolutely necessary to prevent any danger of foots being in the oil after drawing finally. This oil is now ready for delivery, and is packed in tins, drums and casks.

This is really a rough outline of the methods followed by Meggitt Limited, who produce an oil equal to that manufactured in any part of the world, giving employment to 200 Australians all the year round.

Boiled Linseed Oil.—Boiled linseed oil, as produced by Meggitt Limited, is made only from refined and matured raw linseed oil. Specially prepared driers, consisting of litharge and manganese, apart from the oxygen absorbed, are the only additions made during the boiling process. In order to ensure a uniform product, every care is exercised as regards percentage of driers used, temperature, oxygen absorption, cooling, etc. Before packing, this oil is also filtered to ensure a perfectly bright and clear product, for which we are pleased to say a constantly increasing demand is being made.

The linseed cake formed in the presses still contains a minimum of 9 per cent. of oil, and is well known in this country as the basis of most stock foods, and finds an ever-increasing sale in the Colonies.

The inspection over, the party was entertained at afternoon tea by their hosts in a building which was completed in the year 1791, and whose solidity and good preservation spoke eloquently of the workmanship of the old days.

Mr. R. H. W. Fraser gave the Institute party an official welcome, and maintained that his company's oil was above the standard, and that if any fault

could be found with paint work in which it was used, the blame lay with the turpentine mixed with it, and not with the oil itself; for there were two kinds of turpentine, the one being vegetable, which was good, and the other mineral, which was bad. The mineral turpentine was too often used because it made the paint spread freely, but it caused such a thin skin of paint to be left as the finished coating that no adequate protection was afforded to the surfaces treated. Therefore architects should investigate and ascertain whether paint failure did not arise from using the deleterious mineral turpentine.

Mr. Alfred Wunderlich (Director) supported the Chairman, and said that his company took credit for supplying the Australian market with linseed oil during the period of the Great War, when importation was impossible. Had it not been for his company's pluck and foresight, no linseed oil would have been available for Australia for years.

Mr. H. Joseland, F.I.A., responded on behalf of the Institute. He apologised for the absence of the President, Mr. G. H. Godsell, F.I.A., and of the Vice-President, Mr. B. J. Waterhouse, F.I.A. (both detained through business relating to the exhibition of the Institute, which was to open on the following

day); also for the absence of Mr. G. Sydney Jones, F.I.A., ex-President); Mr. A. F. T. Somerville, F.I.A.; Mr. H. Ruskin Rowe, F.I.A.; Mr. E. A. Scott, F.I.A.; Mr. A. Spain, F.I.A.; and Mr. T. F. Cosh, F.I.A. Mr. Joseland said that he had been interested and impressed by his visit, and failed to understand how any oil on the Australian or other market could possibly be better than that produced by the Company.

Mr. J. J. Copeman supported. He said that hitherto he had said to canvassers, when Colonial oil was the subject, that they had better have a piece of work executed with their product, and ask him to give his opinion on it in four years' time. Now, however, he was convinced by inspection and intricate questioning of the value of the Meggitt process, and would be prepared in future to combat any arguments against their oil.

Mr. H. Joseland then proposed success and prosperity to Messrs. Meggitt Ltd., and the toast was enthusiastically honoured.

Mr. S. W. Philips and Mr. J. O. Meeks responded for the Company.

The party was photographed by Mr. A. Lanyon Clark, and left for town about 4.45 p.m.

FEDERAL COUNCIL OF THE AUSTRALIAN INSTITUTE OF ARCHITECTS

Scale of Professional Charges,

As amended at the Annual General Meeting of the Federal Council, held at Melbourne, February, 1922.

1. The minimum charge to be made for an Architect's services shall be 6 per cent. on the total cost of the works executed from his designs, except as hereinafter mentioned. But for all works on which the expenditure is mainly for special or skilled labour rather than for materials, the Architect's charge may be increased in accordance with the special circumstances and conditions of the case.

2. The 6 per cent. charge is made up as follows, viz.:—

- (a) All necessary general drawings and specifications sufficient for a contract, $2\frac{1}{2}$ per cent.
- (b) Obtaining tenders and entering into contract, any necessary detail drawings and instructions for execution of works, examinations and passing of the accounts, inclusive of measuring and valuing extras and omissions, general inspection of work in pro-

gress (exclusive of Clerk of Works), $3\frac{1}{2}$ per cent.

- 3. (a) Where preliminary scale drawings and estimates of buildings proposed to be erected, but not afterwards built, under the Architect, are prepared under instructions from a client, the charge shall be $1\frac{1}{4}$ per cent. on the first £2,000 of the estimated cost and thereafter as may be arranged with the client.
- (b) Where the Architect has worked out the design, with all necessary general drawings and specifications sufficient for a contract, and the works are not subsequently carried out by the Architect, the charge shall be $2\frac{1}{2}$ per cent. in cases where the full commission would be 6 per cent. If tenders are obtained for the work, by instruction of the employer, the charge shall be 3 per cent. If detail drawings are prepared a further charge shall be made.

- (c) In the case of works for which a higher rate than 6 per cent. is chargeable for full services, the foregoing proportions of such higher rates shall be charged where the works are not subsequently carried out by the Architect.
 - (d) Payment of the above charges shall be due to the Architect on the completion of the respective services to which they refer, whether the work proceeds or not, and shall be calculated upon a fair and reasonable estimate of the cost.
4. The cost of furnishing copies of drawings, specifications and detail drawings for the use of Contractors, Clerk of Works, Municipal and other authorities, is included in the foregoing charges under Clause 2 (b), and the Architect shall in no case accept any fee or emolument from the Contractor. All copies of drawings and specifications supplied to the Contractor shall be returned to the Architect before obtaining the final certificate, and shall remain the property of the Architect.
5. For carrying out alterations, additions, and repairs, where extra trouble is involved, the Architect is entitled to charge a commission up to $7\frac{1}{2}$ per cent. to works costing less than £500. In such cases the charge to be made according to circumstances.
6. The above rates of commission do not apply to works costing less than £500. In such cases the charge to be made according to circumstances.
7. In cases where it is necessary to prepare plans of existing buildings in order to carry out proposed additions or alterations, a charge may be made for such work in addition to the usual fees.
8. The foregoing charges do not cover professional services in connection with negotiations for site, in surveying it and taking levels, in making surveys and plans of buildings to be altered, in arrangements respecting party walls or rights of light, nor services incidental to arrangements consequent upon the failure of builders whilst carrying out work, or in cases of subsequent litigation, but in all such services the time and expense involved thereby may be charged.
9. Advertising, duty stamps, travelling expenses, and time occupied in travelling, are not included in the foregoing charges; for these a special charge may be made.
10. A separate charge may be made for material alterations in the plans and specifications.
11. For examining drawings and specifications or the valuation of land or buildings or inspecting and reporting on buildings, or both, for mortgage or otherwise, and certifying for advances, the charge shall be, for the first £1,000, £2 2s.; and a maximum

charge for the next £9,000 or part thereof, one-eighth of 1 per cent.; and for the remainder, one-tenth of 1 per cent. on the estimated value.

12. For specially designed fittings, decorations, sculpture, leaded glass and other like works the charge to be up to 10 per cent. on the total cost.

13. One half the total commission for work carried out under the Architect's superintendence shall be due to the Architect from the employer when the drawings and specifications are prepared the remaining half to be payable on the amount of work done from time to time.

14. Fees paid by Insurance Companies, Banks and Building Societies for surveys of property are excepted from the foregoing rules.

15. For attendance as witness in arbitration or a court of law, or for attendance as arbitrator or umpire in an arbitration, a charge of not less than five guineas per day, or part of a day, be made.

16. All drawings and specifications shall remain the property of the Architect.

17. The Architect's inspection of the work in progress is general only, and where more than this is necessary, a Clerk of Works (approved by the Architect) should be appointed, the salary of such person being paid by the employer, independently of the rates of payment to the Architect as above defined.

18. The Architect shall in all cases base his commission, fees, or remuneration upon the entire cost of the building as if executed under a contract and of new materials, including all fixtures necessary to render it fit for occupation; and he is further entitled to additional remuneration for furniture, machinery, or other articles designed, treated for, or purchased by him. A commission of $2\frac{1}{2}$ per cent. shall be charged upon works, originally included but subsequently omitted in execution. If any material or work used in the construction of the building be already upon the ground, be possessed by, or come into possession of the employer, the market value of such shall be ascertained by the Architect and added to the actual cost of the works before his commission is computed.

19. When any work is carried out by day labour or separate contracts under a Clerk of Works or Working Foreman, including the checking and passing of accounts, the minimum commission shall be 6 per cent., or at a higher rate by special arrangement. And when work is so carried out the Architect shall in no way be held responsible for any of the risk or liability attached to the office of builder, the proprietor in all such cases taking upon himself all risks, liabilities and responsibilities attached to the said office of builder.

20. When expert advice is required for the installation of machinery or special systems the expert's fee shall be paid by the employer in addition to the Architect's commission.

21. For taking instructions, preparing sketch design, making approximate estimate of cost, preparing drawings and specifications, obtaining tenders, advising on tenders and on preparation of contract, selecting and instructing consultants, furnishing to the Contractor one copy of the drawings and specifications and such other details as are necessary for

the proper carrying out of the works, general supervision, issuing certificates for payment, and passing and certifying accounts:—

- 6 per cent. upon the first three cottages.
- 5 per cent. upon the next nine cottages.
- 2½ per cent. upon the next sixty cottages.
- 1½ per cent. upon the remainder.

This scale covers the ordinary variations in type of house and modifications as are made to avoid monotony in appearance.

THE ARCHITECTS' ACT

Many members of the Institute are making enquiry as to when this Act is to become operative, and for their information the following statement is made:—

The first Board was gazetted on 27th January, 1922, its personnel being as under:

Ex-officio Members: Leslie Wilkinson, F.R.I.B.A., Professor of Architecture, University of Sydney; George Herbert Godsell, F.I.A., President of the Institute of Architects of N.S.W.; Alfred Samuel Hook, President of the Architects' Association of N.S.W.; Byera Hadley, F.I.A., Lecturer in Charge of the Department of Architecture, Sydney Technical College.

Additional Members: William Martin; James Nangle, O.B.E., F.R.A.S., F.I.A.; John Sulman,

F.R.I.B.A.; Richard Macdonald Seymour Wells, F.I.A.

The Board is now waiting for the Minister of Education to summon it for its first meeting. When that meeting takes place, and a President has been elected, officers appointed, etc., the necessary machinery will be put in working order, and then His Excellency the Governor will proclaim a date when the Act shall come into force. Members of the Institute will be advised by notice in this journal in due course, and in good time of the arrangements made with respect to the making of applications for registration and of the date proclaimed for the coming into force of the Act, and there will probably be advertisements in the daily press.

INSTITUTE LIBRARY

Library Rules for Borrowers.

1. If a book is lost or stolen from a borrower, or if the same is not returned by him within fourteen days, from the date of issue, he shall replace it, or pay to the Council the full value of such book. In case of the book being part of a set or series, and the borrower neglecting to return the same within fourteen days as aforesaid, or being unable to replace the same, in consequence of its having been lost or stolen, he shall pay to the Council the full value of the whole set or series.

2. A borrower shall keep the books borrowed by him from the Library clean and in good condition, and shall not tear, nor turn down the leaves, nor mark, nor deface, damage, or injure the book in any way.

3. If a book is torn, damaged, marked, defaced, or injured while lent to a borrower, such borrower shall, within one week of notification from the Council, replace the book, or pay to the Council the

full value of the book; or, in case it is part of a set or series, and he shall not replace the said book, the full value of the whole set or series.

In cases where the book is replaced the borrower shall be entitled to the injured book.

4. A borrower shall be entitled to borrow only one book at a time, but at the discretion of the Council two volumes of one work may be issued at the same time.

5. A borrower shall return any book borrowed at the latest within fourteen days after the date of issue; but books may be renewed upon application at the discretion of the Council.

6. If a book is not returned within the time prescribed by the preceding rule, the borrower shall pay the sum of sixpence for each and every day the book is retained beyond the prescribed time.

7. Certain volumes may not be removed from the Library, and are for reference only.

LIST OF BOOKS

The following is a catalogue of books in the Institute Library. Reference can be made to same on application to the Secretary.

31. Greek Architecture—Brown, E. A.
92. Classic Architecture, folio plates—Mitchell, C. F.
101. Rome—Taylor, G. L., and Cresy, E.
108. The Architecture of Palladio.
32. Norman Architecture—Brown, E. A.
34. Gothic Architecture—Brown, E. A.
36. Abbey Church of St. Albans—Buckler, I. E., and C. A.
- 42-43. Memorials of Cambridge, 2 vols.—Le Keux.
- 47-50. The Antiquities of Scotland, 4 vols.
51. Abbeys of Teviotdale.
52. Details of Gothic Architecture—Colling, J. K.
- 53-55. Examples of Gothic Architecture, 3 vols.—Pugin, W.
- 56-57. Analysis of Gothic Architecture, 2 vols.—Brandon, R. and J. A.
- 67-69. The Ecclesiologist, 3 vols.
77. Paley's Gothic Moulding—Fawcett, W. M.
102. Worcester Cathedral—Wild.
91. Gothic Architectural Parallels—Sharpe.
99. Views of Houghton.
110. Mansions of England in the Olden Times—Nash, J.
106. Architectural Remains of the Reigns of Elizabeth and James.
- 35-36. Public Buildings of London, 2 vols.—Pugin and Britten.
- 38-39. Churches of London, 2 vols.—Godwin and Britten.
93. Plans, Elevations and Sections of Buildings—Soane, J.
100. The Works of Inigo Jones—Triggs, H. E., and Tanner, H.
- 96-97. Later Renaissance Architecture in England, 2 folios—Belcher, F., and McCartney, M. E.
95. English Interior Woodwork—Tanner, H.
21. The Art of the Plasterer—Bankart, G. P.
- The Decoration and Furnishing of Town Houses—Edis, R.
46. The Art and Craft of Garden Making—Mawson, T. J.
89. Detail and Ornament of the Italian Renaissance—Oakshot, G. J.
- 85-88. Die Renaissance in Italy, 4 folios—Schutz, A.
- Architectural Styles—Rosengarten, A.
73. The Story of Architecture—Waterhouse, P.
79. History of Architecture—Fletcher, B. F.
90. Architecture—Juone.
70. Palaces of Nineveh and Persepolis—Ferguson, J.
83. History of Ancient Architecture—Ferguson, J.
82. History of Modern Architecture—Ferguson, J.
84. History of Medieval Architecture—Ferguson, J.
33. History of the Gothic Revival—Eastlake, C.
38. Rickman's Gothic Architecture—Parker, J. H.
44. Gothic Architecture in England—Bond, F.
71. History of Architecture (Gothic and Renaissance)—Smith & Poynter.
75. Concise Glossary of Architecture—Parker, J. H.
76. Introduction to the Study of Gothic Architecture—Parker, J. H.
- 26-27. History of Renaissance Architecture in England, 2 vols.—Blomfield, R.
28. Early Renaissance Architecture in England—Gotch, J. A.
41. Gwilt's Encyclopedia of Architecture—Papworth, D. W.
- 58-67. Dictionnaire Raisonne de l'Architecture Francais—Viollet-le-Duc, M. E.
105. Plans of Sydney—Done, H. P.
105. Who's Who in Architecture.
1. Strength and Elasticity of Australian Timbers—Warren, W. H.
7. Building Materials—Middleton, G. A. T.
- 22-25. Modern Buildings, 4 vols.—Middleton, G. A. T.
- 15-16. Building Construction, 2 vols.—Mitchel, C. F.
20. Modern Practical Joinery—Ellis, G.
12. Shoring and Underpinning—Hadder-Stock, C.
18. Specification in Detail—Macey, F. W.
- Australian Building Practice—Nangle, J.
13. Practical Science for Plumbers and Engineers—Wright-Clarke, J.
17. The Plumber and Sanitary Houses—Hellyer, S. S.
19. Sanitary Engineering—Moore, E. C. S.
6. Australian Building Estimator—Jefferies, W.
- Builder's Price Book, 1910—Lockwood.
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107. Sterography, A Complete Body of Perspective—Hamilton, F.
 10. Acoustics of Public Buildings—Smith, T. R.
 5-9. Principles of Plane Geometry and Projection, 2 vols.—Angell, H.
 2. Principles of Architectural Perspective—Middleton, G. A. T.
 11. The Elementary Principles of Graphic Statics—Hardy, E.
 45. Architectural Drawing—Spiers, R. P.

The following Periodicals and Journals are also available:—

Journal of Proceedings of the *Royal Institute of British Architects*.

Journal of Proceedings of the *American Institute of Architects*.

Journal of Proceedings of the *Architectural Association, London*.

Journal of Proceedings of the *Natal & Transvaal Institutes of Architects*.

Journal of Proceedings of the *Japanese Institute of Architects*.

The British Builder.

SCHEDULE OF WAGES AS PER AWARDS AND AGREEMENTS AND THE 44 HOUR PROCLAMATION

Trade	Hours.	Rate per hr.	Date from which rate takes effect.
Painters	44	2/4 ³ / ₈	May 2, 1921.
Bricklayers	44	2/7 ¹ / ₂	"
Plasterers	44	2/7 ¹ / ₈	"
Plumbers	44	2/6	Nov. 4, 1921.
Stone Polishers	44	2/3	May 2, 1921.
Stonemasons (cutters)	40	2/9 ³ / ₄	"
Stonemasons (setters)	44	2/9 ³ / ₄	"
Quarrymen	40	2/8 ¹ / ₄	"
Carpenters	44	2/6	August 12, 1921.
Slaters	44	2/7 ¹ / ₂	May 2, 1921.
Tilelayers	44	2/5 ⁵ / ₁₁	"
Builders' Labourers	44	2/3 ¹ / ₄	(As regards pay April 1, 1921.)
Pick and Shovel Men (State Award)	44	2/2 ¹ / ₄	(As regards hours May 2, 1921.)
Electrical Mechanics	44	2/3 ⁹ / ₂₂	Dec. 30, 1921.
Builders' Labourers (Members of B.L. Federation under Federal Award)	44	2/3 ¹ / ₄	(As regards pay March 1, 1921.)
Railway, Road, Bridge, etc. Labourers	44	2/- ¹⁷ / ₂₂	January 1, 1922
Crane Drivers	44	2/9	June 5, 1921.
Hoist Drivers	44	2/6	June 5, 1921.
Builders' Carters	44	£4/7/6	Dec. 23, 1921.
Machinists (Gen. Joiners)		£5/4/-	January 27, 1922
Machinists' Labourers		£4/9/-	"
Bridge and Wharf Carpenters		2/7 ¹ / ₂	.. August 12, 1921.

Price of Materials.

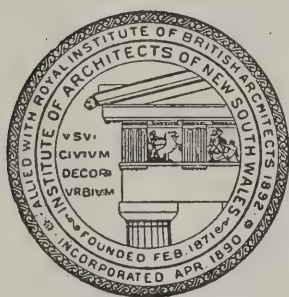
Bricks (Common)—At Kiln, per 1000 ..	68/-
Cartage of bricks to site (as per current rates).	
Timber (Basic Prices).—	
Hardwood, per 100ft. sup.	36/-
Oregon	40/-
Redwood	75/-

New Zealand White Pine and Rimu

(6in. wide)	56/6
Richmond River or Hoop Pine	58/6
Cement—Per three bags (according to quan.)	20/- to 22/6
The above prices, with the exception of bricks, are for city delivery.	

ARCHITECTURE

THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



MAY 15TH
1922

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INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

Minutes of an Ordinary General Meeting held at the Royal Society's Hall, 5 Elizabeth Street, Sydney, on Tuesday, 11th April, 1922, at 8 o'clock, p.m.

Present: Mr. G. H. Godsell, the President, was in the chair, and there were twenty-five members present.

Apologies.—Apologies were received from Mr. R. V. Minnett, Mr. A. W. Anderson, Mr. J. Peddle, Mr. H. Joseland and Mr. A. Aley.

Minutes.—The Minutes of the Ordinary and Annual Meetings of 14th March were taken as read and confirmed.

Lecture.

Mr. S. V. Rowe delivered the following lecture upon "Furniture and Decoration":—
President and Gentlemen,—

It gives me much pleasure to be present this evening to respond to the honour you have paid me in asking me to deliver an address on the subject of "Furniture and Decoration."

The subject is a wide one—therefore I do not propose to deal with it exhaustively with the time at my disposal.

I will make no attempt to deal with the historical side of the subject, but rather discuss the state of its development to-day and its relation with Architecture, dealing separately with the essentials governing its appropriateness and beauty.

Let us consider the first phase—that of *Utility*. How often do we find this most important consideration, with its many demands, left to the last. After great care has been given to secure the attractiveness of Furniture, and money has been spent upon its embellishment, it is sometimes found that the purpose for which it was intended has hardly been thought of.

Utility must come first, and, when that is secured, ornamentation is the next consideration, providing there is the means to do it.

Perhaps the Chair may claim to be the most indispensable article of furniture in common use and that which responds to our individuality. Yet, what little thought is given to securing the benefits of comfort we should expect from it.

Frequently we find that our anticipations of repose are checked by some ill-devised feature of construction or badly executed piece of carving just where the shoulders are supposed to rest. The ornamentation then becomes an irritation. Not only the chair, but other articles of furniture are often ill-devised. Those responsible for them have evidently never known the proper use their goods were intended for, or they would have designed them with more care.

A Wardrobe may be captivating by the number of its mysterious drawers, its cupboards and its lead-light panels, but if it does not provide ample room for our clothes, the reflection of ourselves in the bevelled mirror of its doors will not alleviate our distress.

The average bought Robe, if it only had a two-foot rule put over it before it was sent home, would expose the reason why one in like resemblance to others was cheaper.

If we measure a suit of clothes on a hanger, it varies from 18 in. to 22 in. Now measure the average made Robe, and it will be found that it measures only 14 in. to 16 in. inside. The reason is obvious: saving in cost of manufacture at the cost of *Utility*, and the same applies to most manufactured furniture at the present time.

Structure.—When the protective tariff was introduced into this country it was done with a grand purpose. There was a ring in it that captivated the minds of most; it appealed to the community as a duty to uphold; instantly it set in motion the resources of our manufacturing leaders—men who previously manufactured but could make little or no progress against the imported article.

Furniture manufacturers were amongst these, and the tariff offered instant opportunities to counteract the imported article, whose introduction had resulted in a variety of goods being exported from the workshops of English and European centres. Our manufacturers were thus assisted to lay the foundation of new manufactures.

I do not wish to convey the impression that I am opposed to protection by my comments. It is a solution of our misgivings regarding present conditions that I am considering, rather than a disparagement of the efforts made to create for ourselves the necessities of our daily life. These, it was thought, we should be quite as capable of providing as well as people in other parts of the world, but the glory of such a future soon faded, and before long the casual remark, "It's good enough," quickly established itself.

Tradesmen with fair business instinct but little knowledge of the trade, came to light; they saw the opportunity to set up in business of their own, and by reproducing the imported articles and varying the design by reference to illustrated English catalogues, attempted to produce similar goods with the requisite attractions, and thus the retailer was enticed and the public misled.

This manufacturer, before long, found himself surrounded and beset by many others of the same type who had established themselves in small premises, using one or two machines and employing six to twelve employees. They bought their timber for immediate use, no thought being given to seasoning the wood; they told you that they paid more for so-called seasoned timber brought from the yards of merchants. This timber, delivered in a week, was leaving their factories the next in some form of furniture.

In addition to this came the abuse of construction. In my opinion, this was forced upon the unsuspecting manufacturer by the competitive retailer, who had also sprung up around us under such enticing *noms de plumes* as "Expert Furnishers," etc. It was he who beat the manufacturer down in his price for repeat orders, and by his expertness he sold us not what we wanted, but what he would have us

buy, and to the personal benefit of the salesman who got extra commission, the profits of which were the primary considerations.

How many of us know to our sorrow after the article has been delivered and paid for, and we are left to ourselves to discover that it does not possess the claims bestowed upon it by the ambitious and good-looking salesman who showed off its good points with practised movements and enticing words that the article is more a source of annoyance than a thing of beauty. I have heard it said that they even become a nightmare and fill people with fear and trembling when their activities are in full swing at night, and the morning reveals the damage where the cracks are showing.

I could relate numerous instances whereby construction has greatly suffered through wanton disregard for the cabinetmakers' craft, as a result of the everlasting cruelties of competition.

Construction in furniture, like all construction, is beautiful in itself if properly executed and should not be hidden. Our very best knowledge should be directed towards emphasising the cardinal features of structure.

What an opportunity for skill is offered by the use of the mortice and tenon with a wedge or pin joint, of a rail or stretcher rail, or the mitre of a struck mould on styles and rail, the stop chamfer, or, in more intricate workmanship, the butt wave jointing in veneer work.

The competitive struggle has dragged the value of craftsmanship down and down until we have reduced the Cabinet Art to joiners' methods, substituting nails for screws, and battens for mortice tenon and dovetails, tongue and groove.

Thus, we have lost, perhaps, for the next generation, the chance to develop the trade because we will have to re-educate our people back to appreciate the value and the beauty of simple yet good construction of a past period; there was a time when even glue was not used.

Hand in hand with construction, the material used must play its part. Whether it is the woods or the subordinate introductions necessary for the completeness of the article or scheme, they claim a part in forming our ideals and rendering them perfect to the extent of existing conditions.

What a lot we read and hear about our beautiful timbers, timbers for which it is claimed have all the essentials of strength and beauty. This is fully acknowledged and specimens may be seen in our museums and in many of our merchants' offices. Yet, ask makers of furniture for them, and their reasons for not possessing them are lamentable.

I will read letters of firms refusing orders because Tasmanian blackwood is specified. Another firm that could only quote for Jap. oak or Queensland maple; and how the workmen refused to work black bean.

All these beautiful timbers are succumbing to bush fires or the fencer's axe, and no one shows any desire, no one demands, and, seemingly, no one cares to stay the hand of destruction. No attempt

is made to cultivate them for future generations. If we fail to appreciate them, let us at least preserve them.

I have sufficient courage to state that the introduction of the American so-called Mission Furniture was the cause of the degeneration of the beautiful craft once practised by Chippendale and others. It allowed the half-trained man to get in and in he has stayed as he found no necessity to develop his knowledge beyond what he knew would be asked for; furniture from the saw, he considered, was good enough. Sanding Machines are the mutilation of finish and were never intended for cabinet construction.

Shortly after I came to this country I felt that before long the true art of furniture construction would be lost and during the last fifteen years it has gradually declined until there are but few left who understand what is meant by furniture making.

We find to-day the remnants of our old firms devoting themselves entirely to standardise repetition of articles where numbers of a kind, run off by machinery, count far more than the traditional past intended.

Many of our factories are owned by men who, in some instances, prior to this new start, had but the slightest knowledge of the cabinet trade, and I could cite instances of my contact with these which would confirm my assertions; yet they continue to fill the windows of our city shops. We are told it provides labour, but at what price to the craft?

It was recently said to me by a prominent man of this city in the furniture world that *we*—he and myself—gave the public just what *we* wanted. *I* tried to give more than they deserved and *he* tried to give them less than they expected. A little reflection, and the truth of this comes home to us.

Fitness. The word has a far-reaching meaning, intended to embody the completeness of the other essentials, *utility and structure*; and at the same time provide that any further necessities of enrichment shall be done with due regard to the requirements, meant to create a thing of use and beauty.

Its appropriateness, proportion, style and colour shall bear with the meaning of the word.

The size of furniture, when made for a particular purpose, place or individual, may be quite complete, but when removed to another locality, into the possession of other people, may run the risk of being entirely unsuitable.

Many shop articles fail to comply with the needs of fitness because of the struggle for novelty; choice is often mis-directed by some other attraction besides its proper purpose, and when put into use its failure becomes apparent.

When the time comes (as it does to most) to select our furniture, we will commence with good intentions, make ourselves weary with variety of choice, fail to secure our real requirements and finish up with accepting the persuasions of others, and fail to secure what was wanted.

The whole question, in my mind, is to what extent the construction of furniture is to be left to

the salesman in a furniture establishment. Do we, as Architects, sufficiently control these essentials? Should not we take the matter more into our own hands, instruct our clients at the time of building. In providing the rooms, are not we better able to appoint the requisite appointments according to the wishes of the persons concerned?

Many articles of furniture, such as book-cases, sideboards, wardrobes and dressers, should be structural and part of the interior treatment. These are required to be of dimensions much too large and heavy to be moved by the average domestic as separate articles, with the result that cleaning behind is left for long periods. There are, of course, certain objections to this form of furnishing—that it might not suit an incoming owner or tenant, but if fireplaces have been designed in keeping with the style adapted, and accepted, why not the furniture fittings? Again, there is the question of additional cost, but if this expense is considered as covering portions of the furnishings it would in time be accepted along with the advantages secured.

I am of the opinion that we do not sufficiently interest ourselves in the matter of interior treatment. It should be part of our architectural work not to stop until every detail connected with the house has been thought out. The word of an Architect should carry more weight than a salesman, and it would if the subject came forward for its just and rightful consideration.

It is invariably the rule that when first you meet a client re his or her furnishings, you are told that "all our money has gone in building the house—it cost much more than we expected and we shall not be able to carry out our ideas as we wished. What we do must be simple and inexpensive"—so, crushed at the very start, you enter upon a heartless task, every suggestion being turned down because "there is no margin."

I remember, as a youth, this same encumbrance was prevalent when the question of furniture came to be considered, and unless we come to the rescue and induce our clients to face the extra cost at the commencement of building, we shall still be confronted with our present results.

When I think of a great country like this and the average amount spent upon furnishing a house, I wonder how, in some of the provincial towns of England, the people afforded the money on furnishing their homes as they did. "Oh, yes," you say, "but things were different then." I don't agree. How many men are there in Australia whose incomes are between £1,000 and £5,000 a year—men who can afford to buy reasonably good furniture, and yet I'll undertake to say these men don't carry a policy for £1,000 insurance on their present furniture and household effects.

My mind takes me back to when I was a boy in the designing office of Messrs. Goodall & Co., Manchester, which was considered one of the best furniture manufacturers of England at that time. It was nothing for me to be sent to distant parts of

England with instructions to take the necessary particulars to make some piece of extra furniture to match that already there. The head designer would prepare the design to be submitted with the price which, if it happened to be a Pollard Oak Sideboard, might cost from one to four hundred pounds. I would later on have to make the working drawing which frequently would take from one to three weeks. Architects, in those days, did seem to have more to say regarding furniture. I have sometimes had to travel the length of England to go to an Architect who was calling for tenders for the furnishing of a town hall, theatre, residence, offices, &c., and I would have to make a complete set of tracings of their designs and full size details, upon these my firm would estimate, and in the event of my firm getting the job their designs and details would have to be stringently adhered to. In this way should not our policy be to carry out and complete all that constitutes a home?

We are all familiar with the name of William Morris—he who rescued English Applied Art from the catastrophe which overtook it during the Victorian era, and placed it so high that the *whole* of manufacturing Europe paid him and his followers the high compliment of following his teachings. He established for us a supreme sense of the beauty and truthfulness of craftsmanship. Does it ever strike you that we may be drifting dangerously near those dark days again? It would seem that there is evidence that we are perhaps unconsciously losing the old love for the artistic and skilful. It seems to me the duty of our profession to arrest this decline and, if possible, to find a remedy, induce greater encouragement, and infuse this community to demand more, and, if so, to see they get it.

I am in charge of the Department of Applied Art at our Technical Schools, and during a year hundreds of students come to me to be taught drawing. Last year 535 students passed through this Department; a third of these had ten lessons a week, or twenty hours' teaching besides homework. These young students are keen on learning, their idea being that at the end of our course they shall readily find occupations in the Applied, Commercial or Industrial side of Art. Now, I would have you gentlemen know that I feel very keenly this responsibility, and am at times depressed, for the outcome is too apparent. I do my best at the start to point out the faint possibilities ahead, and when those who have persevered steadily and acquired what would be considered sufficient knowledge consistent with the course followed, they appeal to me and ask "what it is all for?" "What are we to do now?" "Can I find them someone that can make use of them?" Some do eventually secure small positions, with our minor industrial firms, where young girls are employed at machine embroidery, stencilling, &c., but these hardly count as Arts and Crafts, or as an avenue of absorption for the scores who entrust themselves to me. This is one of those problems that should be faced—but by who is the question.

I am afraid I have departed somewhat from my

subject and trust you will pardon me, but as the opportunity offered itself to cite these instances, I could not let it pass.

Designing Furniture.

All designers should be practical and should have a thorough understanding of the possibilities of the materials to be employed, and with an inherent feeling for Art it is certain to be effective. In this way the public would be educated to appreciate the beautiful in modern decorative and applied art and the ennoblement of industries in the co-operation of Art, Industry and Handicraft.

The lessons that confront every designer are the laws already laid down—utility, construction and fitness. The more admirably these are co-related, one with the other, and each with the whole, the better the design. What interests the designer most is the means of satisfying his desire for exercising his skill. If he is a versatile student he may be called upon to design in various styles—maybe Renaissance or Gothic, Elizabethan, Jacobean, Chippendale, Hepplewhite or Sheraton. Being familiar with these, his work is at once restricted to the demands required by these styles and he must abide by them, but if free and not restrained his individuality may take him where he may choose.

The subject of furnishing and decoration should be of wide-reaching interest and some of the guiding principles should be of service to everyone confronted with the problems of beautifying a home.

Let us take a supposed room, either library or sitting-room, in a house that is new and architecturally complete. The chief requirements for this room, it will not be disputed, are *restfulness* and *comfort*. It follows, then, that the satisfactory room is that which embodies the effects most conducive to this end. A perfectly conceived room, in my mind, is a room that appeals to most, and upon entering and leaving, leaves no cause for expression for or against. How few ever think what our friends like and what an undertaking it would be attempting to please them. How many are candid enough to tell us what they think of our tastes, therefore the room so devised leaves little or no grounds for comment and is satisfying to all.

Colour.

Much research has been devoted to experiments for demonstrating the immense physical effect of colour; in the case of human beings the effect produced mentally exceeds, if anything, the mere physical effect.

It is hardly possible, therefore, to over-rate the importance of the colour scheme in decoration, as affecting the health and happiness of those who may be exposed to its influence.

In general, the proper mean is attained by that which is cheerful without being gaudy, and quiet without being sombre.

In selecting colours for any given room care should, of course, be taken to consider the aspect of the room and whether it is required to be kept

cool or warm. For instance, most of our homes are in close proximity to natural and beautiful surroundings. Care should be exercised that the artificial scheme should not clash with this and destroy each other.

As to colour and form in ornament, there should be a strict balance between that which is neither too strange, on the one hand, nor yet dull and commonplace on the other.

Monotony is wearisome and depressing unless handled successfully, while eccentricity shocks and leaves no repose.

Over-severity is repelling and should only be attempted when the treatment is temporary, while lavishness savours of vulgarity and ostentation.

Excellent effects can be got now-a-days with wall-papers, which may supply the keynote to a colour scheme in itself. There are times when we cannot get just the particular effect desired, but I frequently do this (*providing I get the right man*) by a little hand-work after the paper is hung on the wall, and in this way blending can be done to any requirements.

Proportion.

In small rooms no arrangement should be attempted to reduce the appearance of its size, whereas large rooms, except for public purposes, having a sense of loneliness, it may be required to reduce their size by decorative treatment.

This is all a question of how the walls are subdivided proportionately, by colour contrast, but the grand controlling influence of proportion must also regulate plain and ornamental surfaces. It is a point that does not always receive the attention it deserves; with a limited purse the temptation is to overlook quality for quantity, and that valuable rule in decoration, contrast, "reticence and enrichment" may be lost.

Wall surfaces should keep their places as backgrounds for human kind, furniture and objects of Art, and should never be allowed to obtrude themselves.

For instance, it is not advisable to run a horizontal division across a wall mid-way between floor and ceiling—it is almost certain to diminish the effect and height of the room, and destroy proportion.

Endless are the treatments that can be effected on wall decorations, and I have always found it the safest plan to first select the carpet, *that* generally being the predominating feature, and assemble the other materials according to your idea; the wall-paper should be last as it is the easiest to provide.

Carpets should be receding in effect, geometrical in design, and of small pattern. There should be nothing that should cause us to ponder before we step upon it, such as floral treatments. Eastern rugs or English Wiltons, I find, offer the best and safest grounds to depend upon.

In choosing wall-paper there are several circumstances to be taken into account; many papers that look promising in a small pattern book may have

an unpleasant effect when hung; this principally applies to pattern papers. It is wisest, therefore, to test the effect by having two or three widths placed side by side and judged in the mass. It is also advisable to try the paper by artificial light as well as by day.

A wall-paper ought to present an almost even surface; should on no account bear a deceptive resemblance to marble, mosaic, wood, embroidery, canvas, silk, or any textile; again, it should not be too pictorial nor should surfaces be too rough—dust hangs upon these and soon robs them of their hygiene.

Much can be done with present day productions but care must be shown in any divisional panels treatment or coloured banding where pictures are to be hung.

With the restricted mediums at our disposal it is a hopeless task to invent much that could claim originality of treatment, and it is by far the safest plan to err on the side of simplicity than to attempt what we have not the proper means of carrying out with certainty and satisfaction.

There is still a great deal more to be said upon these important and far-reaching subjects, but I feel that I have already trespassed upon your kind attention in listening to my somewhat vague rendering of these subjects, and I will close by thanking you all for your patience.

Professor Leslie Wilkinson moved a vote of thanks to Mr. Rowe for his interesting and instructive paper. Mr. B. J. Waterhouse supported, and it was carried with enthusiastic acclamation.

Federal Scale of Professional Charges.

The President made a lucid statement concerning the Federal scale of professional charges and explained why the notice of motion regarding same was placed on the business paper. He also stated that the Council had adopted the following resolution, which he desired to substitute for the original motion. Mr. B. J. Waterhouse seconded the President:—

"That this Institute adopt, *pro forma*, the Federal scale of professional charges until the I.A.N.S.W. revised code has been accepted by the Federal authority."

Mr. J. A. Kethel said that the substituted motion would be out of order, and he was supported by Mr. A. F. T. Somerville and Mr. E. A. Scott, the latter urging that the original motion should be put in order that it might be turned down so as to leave the way open for the substituted motion, of which notice could be given on the May business paper.

Mr. H. V. Vernon and Mr. S. M. Mould supported the President.

Eventually the original motion was put and lost. Direction was given for the substituted motion to appear on the next business paper.

The debate was characterised by the utmost good feeling and Mr. H. E. Budden tendered his congratulations upon the Chairman's discretion and able conduct of the meeting.

Library.

Mr. H. Lockley moved in regard to the Library according to notice on the business paper:—

"That Rule 6 of 'Rules to Borrowers' be rescinded, and that the following be substituted: 'If a book is not returned within the time prescribed by the preceding Rule, the borrower shall pay the sum of one penny for each and every day the book is retained beyond the prescribed time.'"

There was no seconder and the motion lapsed.

Students' Designing Club.

The award of Mr. F. Glynn Gilling for work in the first session of this Club was announced. The competitors' sealed envelopes were opened by the President and the results were:—

- 1st Prize, £15—"Hope," Mr. K. B. Hudson, c/o. Lecturer-in-Charge, Architecture Department, Sydney Technical College.
- 2nd Prize, £7/10—"45," Mr. W. J. White, c/o. Messrs. Bruce & Harral, King William St., Adelaide.
- 3rd Prize, £2/10—"Trier," Mr. M. P. Gibson, Education Department, Sydney.

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
Auckland Citizens' War Memorial	30/6/22	Approved
N. S. War Memorial ...	—	Approved.

NOTES OF A DEPUTATION FROM THE FEDERAL COUNCIL OF THE AUSTRALIAN INSTITUTE OF ARCHITECTS

WHICH WAITED UPON THE MINISTER FOR WORKS AND RAILWAYS
(THE HON. R. W. FOSTER) *on 3rd February, 1922*

Present were Mr. L. Laybourne Smith (President of the Federal Council), Mr. G. H. Godsell (President New South Wales Institute), Mr. B. J. Waterhouse (New South Wales), Mr. K. A. Henderson (President Victorian Institute), Mr. F. Stapley (Victoria), Mr. A. H. Masters (President Tasmanian Institute), Mr. R. Martin Wilson (Queensland).

Mr. L. Laybourne Smith (President of the Federal Council) stated that early in 1914 the Federal Council of the Institute of Architects was founded—primarily to assist the Federal Government in connection with proposals at Canberra; and secondly, to bring the interests of the different States into line with a view to improvement. A very definite promise was made by the Federal Government at that time to the effect that when the national buildings at Canberra were under consideration, the architects of Australia would be given an opportunity of advising the Government in regard thereto. The members of the Council were of opinion that they were not kept in touch with developments—their opinion was not being sought in connection with proposals for the Federal city. The object of the deputation was to offer to the Minister their services once more. They controlled the private architectural work throughout the Commonwealth, and were in the position to give good advice. In regard to the appointment of the Federal Capital Advisory Committee, it was considered that a representative of the architectural profession should have been appointed thereto. Neither Mr. Sulman nor Mr. Ross represented the architects of Australia.

In reply to a question by the Minister, Mr. Laybourne Smith stated that the Institute of Architects would be in a position to advise on the general lay-out of the city and the construction of the buildings. They offered their assistance without any suggestion as to remuneration.

Mr. G. H. Godsell (President of the New South Wales Institute) brought under notice that a plan, referred to in the Advisory Committee's report, was missing therefrom, and pointed out that without the plan in question they were unable to assure themselves that the lay-out of the city was being carried

out in accordance with Mr. Walter Burley Griffin's design, which was adopted by the Government.

Colonel Owen (Director-General of Works) explained that owing to the necessity for placing the report before Parliament urgently it was not possible to have copies of the map referred to prepared. A copy of the map in question was, however, included in the copy of the report submitted to Parliament. He indicated on the map in the report the areas set aside for residential purposes, etc.

Mr. Godsell said that the proposal of the Advisory Committee was to spend an amount of £1,000,000 within the next three years on buildings. The buildings in question, he contended, could not be of a temporary nature. They must form part of the public and monumental buildings of the city and of the whole scheme, and if they were to be a success they should be designed in conformity therewith. He read a communication received by the Council in June, 1920, from the Secretary of the Department in which it was stated that when the time arrived for the consideration of the important public buildings of Canberra the Minister's views were that the Council should be consulted with regard to the best procedure to be adopted.

He contended that whatever buildings were about to be built should and could form part of the complete scheme.

Mr. Godsell then quoted from the report of the Advisory Committee the proposals regarding expenditure on building, etc.

In regard to the proposed expenditure on Parliament House, the Minister inquired as to whether Mr. Godsell's impression was that the money provided was to go towards the construction of the permanent Parliament House. Mr. Godsell replied to the effect that he considered such was the case, whereupon the Minister informed the deputation that it was proposed to erect a provisional Parliament House, which would be utilised for the purposes of Parliament for, perhaps, 50 years. The monumental structure provided for in the design could not be constructed during the present generation. The building that would be erected under the

present proposals would be utilised for other purposes when the monumental building was completed. It was necessary to look at the matter in the light of the conditions now existing, the difficulties in regard to finance, the excessive costs of construction, etc.

Mr. Godsell suggested that before the matter goes any further the Minister take the architects of Australia into his confidence with regard to policy in regard to the Federal capital. It would be an injustice to the architects of the Commonwealth that their views and ideas should not be placed at the disposal of the Commonwealth Government. He pointed out the possibility of the waste of large sums of money and the consequent ruination of the city. Whatever buildings were about to be constructed should form part of the completed scheme.

The Minister here stated that most of the structures to be erected would form part of the completed scheme. In the case of Parliament House this building was not to be erected on the site for the permanent building, but would be utilised for other purposes on the completion of this structure.

Mr. Godsell contended that it would be possible and desirable to make the building, which it was proposed to erect for use as a Parliament House, form a nucleus of the permanent building. The completion of the monumental structure could be left to the future.

Col. Owen informed the deputation that this point was considered years ago. In connection with the programme now under consideration the proposal was not feasible.

Mr. Godsell stated that if the Minister would take the architects of Australia into his confidence he was certain they could prepare a scheme for his consideration which would be a great improvement on the present proposals. An endeavour had been made to obtain information, but Mr. Sulman, the Chairman of the Advisory Committee, stated that until the whole of the matters were made public he could give no information.

The Minister pointed out that Mr. Sulman and the members of the Committee were advisors to the Government, and reported to the Minister.

Mr. Godsell emphasised the advisability of taking the whole profession of Australia into the confidence of the Government. There should be nothing secret in the construction of the Federal Capital City, and the architects of New South Wales and Australia generally should be given an opportunity of utilising their talents in the interests of the country. By wrapping the matter up in the Department and excluding the profession, there was a possibility of

spoiling the Federal Capital. It did not matter how modest the first stage of construction was, whatever was being built should form portion of the future city, and any structures about to be erected should be placed in the right position, in accordance with the design.

Mr. K. A. Henderson (President of the Victorian Institute) stated that the buildings which it was now proposed to erect at Canberra, at a cost approaching one million pounds, should form part of the architectural scheme of the city, and the skill and genius of the architectural profession of Australia should be devoted quite as much towards their construction as towards the construction of the main monumental buildings to be erected in the future. The profession had been promised by previous administrators that they would be consulted. If the Canberra of the future was to be an architectural whole, with an architectural motive running through its building, quite as much attention should be devoted to the smaller units as to the central units.

Mr. B. J. Waterhouse contended that the buildings which were now to be erected would materially influence the character and type of structure of the future city. The architects of Australia would like to see these buildings considered in relation to the larger scheme of the Federal city. He would like to know the type of design adopted, and their location in relation to the city proper; also that, in connection with the erection of these buildings, the original design was not to be departed from. He considered it would be an advantage in the interests of the future city that the members of the profession in all the States should be afforded an opportunity of advising as to the type of structure to be adopted.

The Minister stated that the design adopted by the Government was being adhered to generally, and was not likely to be departed from.

Colonel Owen indicated on a plan embodied in the Advisory Committee's report the positions upon which the buildings in question were to be erected, and pointed out that these buildings would not in any way interfere with the permanent structures when erected.

The Minister informed the deputation that he would have no objection to letting the members of the Council view the designs for any of the buildings to be erected, or to giving any information desired in relation thereto.

Mr. Waterhouse, in continuation, added that the Council strongly desired to see an architect, nomin-



FEDERAL COUNCIL AUSTRALIAN INSTITUTE OF ARCHITECTS, MELBOURNE, FEBRUARY, 1922

Reading from left to right: A. H. Masters (Tasmania); W. M. Campbell (Victoria); R. Martin Wilson (Queensland); G. H. Godsell (N.S.W.); L. Laybourne Smith (South Australia); K. A. Henderson (Victoria); B. J. Waterhouse (N.S.W.); Frank Stapley (Victoria)

ated by that body, appointed to the Advisory Committee. He stated there were men in the profession who would willingly give their services free of charge to the Government in this connection, their only desire being to ensure that the future Federal City should be made as beautiful as possible. It was in his opinion, however, unfair that the buildings, covered by the present scheme, should not be thrown open to public competition.

Mr. F. Stapley expressed the hope that, before anything definite was done, the Minister would obtain the advice of the profession, and that consideration would be given to the request submitted that the architects of Australia be given representation on the Advisory Committee. In other countries, he pointed out, the best class of work was given to the institutes of architects, and he considered this should be done in connection with the work at Canberra. The building about to be erected should form part of the whole city. Architects of Australia would have been only too pleased to afford their advice in an advisory capacity. He endorsed the remarks of previous speakers to the effect that the buildings now about to be erected would decide the character of the city. The work done now would not be "scrapped" later on. He thought the Government was starting on the wrong lines, and that if these matters were not taken into consideration now a great mistake would be made.

The Minister in reply informed the deputation that the promises made by his predecessors in office would be adhered to. Generally speaking, when any monumental structures or the principal features of the city were under serious consideration, the Institute of Architects would be given opportunities of making representations to the Government, which representations would receive careful consideration. In regard to the suggestion that the Institute of Architects be given an opportunity of nominating a representative on the Advisory Committee, he promised that any representations in that direction would be placed before the Government. The Committee was doing very useful and practical work in association with the officers of the Department.

He did not know what amount of money would be made available for expenditure on construction works in the Federal territory. That was a matter for Parliament to determine. Very shortly, possibly, proposals would be placed in his hands covering expenditure for the twelve months or so. There would, however, be no heavy expenditure on monumental buildings for years to come. The buildings which

would be erected for use for parliamentary and other purposes would be placed in such positions as not to interfere with the general design, and on the completion of the permanent structures these buildings would be utilised for other purposes. Every effort would be made to avoid expenditure on the construction of buildings which would have to be scrapped later on. In regard to the suggestion of the deputation that the buildings about to be constructed at a cost of £1,000,000 (in accordance with the programme outlined in the Advisory Committee's report) should form part of the permanent structures, the Minister, while expressing himself as not favourable thereto, desired the President to furnish him with full details as to any representations the Council desired to make in this connection, and promised that the same would have careful consideration. As to the scheme adopted in connection with the construction of the city, he informed the deputation that recently he had received from Senator Pearce (Minister of Defence), who was at present at Washington, and who had taken a deep interest in the history of that city, a communication stating that the proposals of the Commonwealth Government regarding their Federal city were on similar lines to those adopted in connection with the United States Capital.

Mr. Foster expressed the desire that the Federal city should be made as beautiful as human genius could make it, and with that end in view the Government would doubtless endeavour to get advice from the best brains in Australia. The public of Australia would be kept fully in touch with developments so far as any important works in the Federal territory were concerned.

Mr. Laybourne Smith, in thanking the Minister for the patient, and, he thought, sympathetic hearing accorded to the Council, drew attention to a letter from the Minister of Home Affairs, July 6th, 1915, in which was stated *inter alia*: "It is desirable, from the Department's point of view, that some movement should be in progress to prepare for beginning construction of Parliament House at a date not too remote, particularly having in mind that on the architectural character of this building the design of subordinate public structures will necessarily depend." That was exactly the point the Council now wished to make, for the reverse of the statement also holds good, the subordinate structures, if proceeded with in the absence of a scheme for the whole, will control, and control detrimentally, the ultimate design of Parliament buildings.

SCHEDULE OF WAGES AS PER AWARDS AND AGREEMENTS

AND THE 44 HOUR PROCLAMATION

Trade	Hours.	Rate per hr.	Date from which rate takes effect.
Bricklayers	44	2/6 ⁷ / ₈	March 31, 1922.
Carpenters and Joiners	44	2/5 ¹ / ₄	"
Stonemasons (cutters)	40	2/8 ⁷ / ₈	"
Stonemasons (setters)	44	2/8 ⁷ / ₈	"
Stone Polishers	44	2/2 ¹ / ₄	"
Quarrymen	40	2/7 ³ / ₈	"
Plasterers	44	2/6 ¹ / ₄	April 7, 1922.
Plumbers	44	2/5 ¹ / ₄	"
Painters	44	2/3 ⁵ / ₈	"
Slaters	44	2/6 ⁷ / ₈	"
Tilelayers	44	2/5 ⁵ / ₁₁	May 2, 1921.
Builders' Labourers	44	2/2 ³ / ₈	April 7, 1922.
Pick and Shovel Men	44	2/1 ³ / ₈	"
(State Award, not members of Builders' Labourers' Federa- tion, and not working for respondents.)			
Builders' Labourers	44	2/3 ¹ / ₄	(As regards pay) May 1, 1922.
(Members of Builders' Lab- ourers' Federation, under Federal Award)			
Electrical Mechanics	44	2/3 ⁹ / ₂₂	Dec. 30, 1921.
Railway, Road, Bridge, etc., Labourers	44	2/- ¹⁷ / ₂₂	Jan 1, 1922.
Crane Drivers	44	2/8 ¹ / ₄	March 3, 1922.
Hoist Drivers	44	2/5 ¹ / ₄	"
Builders' Carters	44	£4/7/6 (per week)	Dec. 23, 1921.
Machinists (Gen. Joiners)	44	£5/4/-	Jan. 27, 1922.
Machinists' Labourers	44	£4/9/-	"
Bridge and Wharf Carpenters	44	2/6-2/7 ¹ / ₂	August 12, 1921.

Price of Materials.

The attention of members is also drawn to the recent increase in the price of bricks, and a reduction in the price of Hardwood and Oregon, which appear in the schedule below:—

Bricks (Common)—At Kiln, per 1,000	73/-	New Zealand White Pine and Rimu (6 in. wide)	56/6
Cartage of bricks to site (as per current rate).		Richmond River or Hoop Pine	58/6
Timber (Basic Prices):—		Cement—Per three bags (according to quan.)	20/- to 22/6
Hardwood, per 100 ft. sup.	34/-	The above prices, with the exception of bricks, are for city delivery.	
Oregon	35/-		
Redwood	75/-		

ELECTRICAL CONNECTIONS

The following letter, which has been received from the Electricity Department of the City Council, is published for the information of members of the Institute:—

"Dear Sir,—

"The Electricity Department of the City Council of Sydney has recently amended the regulations governing the laying of electricity supply services on to private premises. One result of the amendment is that the contractor carrying out the electric installation is called on to provide conductors between the point where the connection to the street main ends on the consumer's premises and the service fuses. I have been approached by a deputation from the Electrical Employers' Association, the members of which have pointed out to me that they are now in serious difficulty. Electrical contractors are constantly asked to quote a price for an electric installation before the service from the street mains is laid on to the premises, and before the position is marked to which the service will be brought on to the consumer's premises. The electrical contractors tell me that architects insist on the price being

a fixed price, and that this puts them in a difficult position, as they do not know where the City Council will attach their service leads to, and therefore they (the electrical contractors) do not know the length which they will have to provide of wires and steel conduit between their main switchboard and the City Council's service.

"I suggest that the members of your Association should agree to accept for consideration a quotation or tender from any electrical contractor for an electric installation for connection to the City Council's mains, if an inclusive price is set out for the main switchboard and all wires, fittings, apparatus, etc., on the consumer's side of the main switchboard, with a price *per foot run* for the wires, conduit, etc., between the main switchboard and the place where the Council's service ends.

"I should be glad to know how this suggestion is received by your Institute.

"Yours truly,

"H. J. FORBES MACKAY,

"General Manager."

INSTITUTE LIBRARY

Library Rules for Borrowers.

1. If a book is lost or stolen from a borrower, or if the same is not returned by him within fourteen days, from the date of issue, he shall replace it, or pay to the Council the full value of such book. In case of the book being part of a set or series, and the borrower neglecting to return the same within fourteen days as aforesaid, or being unable to replace the same, in consequence of its having been lost or stolen, he shall pay to the Council the full value of the whole set or series.

2. A borrower shall keep the books borrowed by him from the Library clean and in good condition, and shall not tear, nor turn down the leaves, nor mark, nor deface, damage, or injure the book in any way.

3. If a book is torn, damaged, marked, defaced, or injured while lent to a borrower, such borrower shall, within one week of notification from the Council, replace the book, or pay to the Council the

full value of the book; or, in case it is part of a set or series, and he shall not replace the said book, the full value of the whole set or series.

In cases where the book is replaced the borrower shall be entitled to the injured book.

4. A borrower shall be entitled to borrow only one book at a time, but at the discretion of the Council two volumes of one work may be issued at the same time.

5. A borrower shall return any book borrowed at the latest within fourteen days after the date of issue; but books may be renewed upon application at the discretion of the Council.

6. If a book is not returned within the time prescribed by the preceding rule, the borrower shall pay the sum of sixpence for each and every day the book is retained beyond the prescribed time.

7. Certain volumes may not be removed from the Library, and are for reference only.

LIST OF BOOKS

The following is a catalogue of books in the Institute Library. Reference can be made to same on application to the Secretary.

31. Greek Architecture—Brown, E. A.
92. Classic Architecture, folio plates—Mitchell, C. F.
101. Rome—Taylor, G. L., and Cresy, E.
108. The Architecture of Palladio.
32. Norman Architecture—Brown, E. A.
34. Gothic Architecture—Brown, E. A.
36. Abbey Church of St. Albans—Buckler, I. E., and C. A.
- 42-43. Memorials of Cambridge, 2 vols.—Le Keux.
- 47-50. The Antiquities of Scotland, 4 vols.
51. Abbeys of Teviotdale.
52. Details of Gothic Architecture—Colling, J. K.
- 53-55. Examples of Gothic Architecture, 3 vols.—Pugin, W.
- 56-57. Analysis of Gothic Architecture, 2 vols.—Brandon, R. and J. A.
- 67-69. The Ecclesiologist, 3 vols.
77. Paley's Gothic Moulding—Fawcett, W. M.
102. Worcester Cathedral—Wild.
91. Gothic Architectural Parallels—Sharpe.
99. Views of Houghton.
110. Mansions of England in the Olden Times—Nash, J.
106. Architectural Remains of the Reigns of Elizabeth and James.
- 35-36. Public Buildings of London, 2 vols.—Pugin and Britten.
- 38-39. Churches of London, 2 vols.—Godwin and Britten.
93. Plans, Elevations and Sections of Buildings—Soane, J.
100. The Works of Inigo Jones—Triggs, H. E., and Tanner, H.
- 96-97. Later Renaissance Architecture in England, 2 folios—Belcher, F., and McCartney, M. E.
95. English Interior Woodwork—Tanner, H.
21. The Art of the Plasterer—Bankart, G. P.
- The Decoration and Furnishing of Town Houses—Edis, R.
46. The Art and Craft of Garden Making—Mawson, T. J.
89. Detail and Ornament of the Italian Renaissance—Oakshot, G. J.
- 85-88. Die Renaissance in Italy, 4 folios—Schutz, A.
- Architectural Styles—Rosengarten, A.
73. The Story of Architecture—Waterhouse, P.
79. History of Architecture—Fletcher, B. F.
90. Architecture—Juone.
70. Palaces of Nineveh and Persepolis—Ferguson, J.
83. History of Ancient Architecture—Ferguson, J.
82. History of Modern Architecture—Ferguson, J.
84. History of Medieval Architecture—Ferguson, J.
33. History of the Gothic Revival—Eastlake, C.
38. Rickman's Gothic Architecture—Parker, J. H.
44. Gothic Architecture in England—Bond, F.
71. History of Architecture (Gothic and Renaissance)—Smith & Poynter.
75. Concise Glossary of Architecture—Parker, J. H.
76. Introduction to the Study of Gothic Architecture—Parker, J. H.
- 26-27. History of Renaissance Architecture in England, 2 vols.—Blomfield, R.
28. Early Renaissance Architecture in England—Gotch, J. A.
41. Gwilt's Encyclopedia of Architecture—Papworth, D. W.
- 58-67. Dictionnaire Raisonne de l'Architecture Francais—Viollet-le-Duc, M. E.
105. Plans of Sydney—Done, H. P.
105. Who's Who in Architecture.
1. Strength and Elasticity of Australian Timbers—Warren, W. H.
7. Building Materials—Middleton, G. A. T.
- 22-25. Modern Buildings, 4 vols.—Middleton, G. A. T.
- 15-16. Building Construction, 2 vols.—Mitchel, C. F.
20. Modern Practical Joinery—Ellis, G.
12. Shoring and Underpinning—Hadder-Stock, C.
18. Specification in Detail—Macey, F. W.
- Australian Building Practice—Nangle, J.
13. Practical Science for Plumbers and Engineers—Wright-Clarke, J.
17. The Plumber and Sanitary Houses—Hellyer, S. S.
19. Sanitary Engineering—Moore, E. C. S.
6. Australian Building Estimator—Jefferies, W.
- Builder's Price Book, 1910—Lockwood.
- Redress by Arbitration—Foulkes-Lynch, H.

107. Sterography, A Complete Body of Perspective—Hamilton, F.
10. Acoustics of Public Buildings—Smith, T. R.
- 5-9. Principles of Plane Geometry and Projection, 2 vols.—Angell, H.
2. Principles of Architectural Perspective—Middleton, G. A. T.
11. The Elementary Principles of Graphic Statics—Hardy, E.
45. Architectural Drawing—Spiers, R. P.

The following Periodicals and Journals are also available:—

Journal of Proceedings of the *Royal Institute of British Architects*.

Journal of Proceedings of the *American Institute of Architects*.

Journal of Proceedings of the *Architectural Association, London*.

Journal of Proceedings of the *Natal & Transvaal Institutes of Architects*.

Journal of Proceedings of the *Japanese Institute of Architects*.

The British Builder.

BOOKS ADDED TO LIBRARY

FROM THE COLLECTION OF THE LATE ARTHUR PRITCHARD ESQ.

These Books have the Imprint.

Masonry, Bricklaying and Plastering Burn
How to Estimate Rea
Specifications in Detail Macey
Building Specifications Leaming
Old Cottages and Farm Houses .. Davie & Dauber
Commonsense Homes Sills
Treatise on Architecture Ashpitel
Book of Country Houses Newton
Architectural Parallels Sharpe
Book of Houses Newton
Architectural Iron and Steel Birkmire
Law of Fire Insurance Colenso
School Architecture Robson
Principles of Planning Marks
High Office Buildings Birkmire

These Books are without the Imprint.

Architectural Examples in Brick, Stone, Wood and Iron.

Engineers' Standard Catalogues, 1919-1922—
Engines and Boilers.
Pumps, Machinery and Plant.
Sanitation, Heating Construction.
Electrical.

British Standard Exporter, 1919-1921—Hardware, Earthenware, Leather.

British Standard Exporter, 1920-1921—Furniture, Music, etc.

Municipal Engineers' Specification.

Colonial Compendium and Export Catalogue, 1920.

Colonial Compendium and Export Catalogue, 1921.

ANNUAL EXHIBITION 1923

Sketching Competition for Students.

Mr. Howard Joseland, F.I.A., offers prizes for sketches by students in connection with the Institute's Annual Exhibition, which will be held early in 1923.

Conditions.

1. Any medium may be used.
2. Competitors must be residents of N.S.W., and under 25 years of age.
3. The subjects must be selected in N.S.W. of old or modern work.

In judging Sketches, consideration will be given to selection of subjects, composition, and quality of work.

1st prize, £3 3s.; 2nd prize, £2 2s.

Winning Drawings to become the property of the Institute, and any Drawings submitted which are

considered to be of sufficient merit by the Hanging Committee will be exhibited at the Exhibition.

All Drawings, except those premiated, must be removed by the Competitors at their own expense, and although every care will be taken of the Drawings, the Council assumes no responsibility as to loss or damage.

The Sketches will be judged by the Donor, Mr. Howard Joseland, together with Professor Leslie Wilkinson.

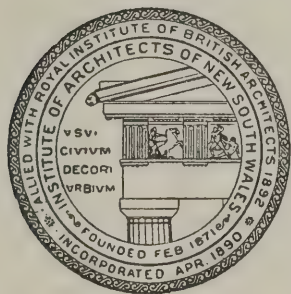
Each competitor must submit six sketches.

Drawings must be delivered to the Secretary, Institute of Architects, 5 Elizabeth Street, Sydney, not later than Monday, 5th March, 1923, at 4.30 p.m.

JOHN J. LOUGH,
Secretary.

ARCHITECTURE

THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



JUNE 15TH
1922

VOL 11. No. 6

PRICE ONE SHILLING

INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

MINUTES OF AN ORDINARY GENERAL MEETING

Held at the Royal Society's Hall, 5 Elizabeth Street, Sydney, on Tuesday, 9th May, 1922, at 8 p.m.

Present: Mr. G. H. Godsell (President) in the chair, and forty-two members.

Apologies: Apologies for absence were received from Messrs. J. Sulman, J. Peddle, J. J. Copeman and E. B. Wilshire.

Minutes.—The Minutes of the Meeting of 11th April were taken as read and confirmed.

Lecture by Mr. T. A. Ogden on "The Influence of the Architect in Fire Risk Improvement."

"Before proceeding to the business end of my address, I would say that when your Secretary approached me about ten days ago and inquired whether I would be prepared to speak to you this evening, I had to ask for a few hours' grace before giving him an immediate answer, for I would state that owing to the very short notice, I felt that I might not be able to do myself justice, and at the same time be confident of telling you anything that would be considered of much value to you from a fire insurance view-point. Moreover, as I am just now in the throes of preparing a presidential address for our Insurance Institute, I was reluctant to accept the call for this evening. Bearing in mind, however, the honour accorded me by your Institute in inviting me to address you, I felt that I had no other course than to show my appreciation by accepting the opportunity of expounding my views as affecting the matter of building construction and fire risk improvement.

"I might further add, that, although actively connected with the building operations in this city, I desire to clearly indicate that I do not propose to tell you anything about building construction from an architectural viewpoint, but I do hope that my remarks, which will deal with building construction from the aspect of the fire underwriter, may prove of interest, and, if as a result of my somewhat disjointed address, a closer and more intimate co-operation between the architects and the fire insurance experts is established, with a consequent more literal observance of underwriters' requirements by our local architects, I shall feel that my humble efforts to-night have not been wholly in vain.

"Fire Waste."

"An examination of the fire loss figures for the State of New South Wales for the past seven years, shows us the appalling total of £4,382,526.

"The following figures are also astounding:—Total fire loss for year 1921, £998,280; loss *per capita* (population, 2,128,786), 9/4.

"We must bear in mind that loss by fire is an actual loss of wealth for which there is no compensation, the community as well as the individual suffers, whether the property be insured or not. The promotion of wealth is retarded by fire, by a series of fires, or by a conflagration. The property burned is equivalent to so much money being taken out of the community. It is therefore a matter of paramount importance that the question of fire risk and risk improvement in our large and congested cities should receive far greater attention than it does at the present time.

"Many people imagine that insurance companies are restorers of wealth, but this is not so. The indemnity paid by insurance companies simply goes into a different channel of circulation. It comes from the premiums of the many to pay the losses of the few—the loss being shared by the many bearing less heavily on the few.

"Early history shows that fire has always been a constant menace to life and property, but the lessons taught by past lamentable experiences have for years gone unnoticed, and, even now in our modern times, are utilised only to a very limited extent.

"In our own fair city, what do we see, some of our large buildings have been destroyed or partly destroyed by fire; some have been rebuilt twice and even thrice with the same old methods of construction and same old lack of fire preventive equipment.

"Some of us do not read the writing on the wall.

"A visitor once asked a warder in a lunatic asylum: 'How do you tell when the patients are insane?' He answered: 'I turns on the water in the basement and sets 'em moppin' up the floors, and them as ain't idjits fust shuts off the water?'

"We have a good many taps running to waste in this country, including the destruction of property by fire,

the denuding of our forests of valuable timbers without re-forestation, the continual industrial upheavals, the deplorable over-legislation, and many others. Some of us are only just beginning to think about trying to turn off the first-mentioned tap, and it is in this connection that the architects are going to be of valuable service. I am fully aware that the architect does not always have a free hand in the planning of a building, being, as a rule, restricted by the financial limits of his client. I have frequently had plans submitted to me—plans which embodied the best principles of slow-burning or fire-proof construction. These plans, however, for mythical economical reasons have been entirely changed at the request of the owner—a cheaper and more combustible building is erected only to await its turn at the ash heap.

"No architect or engineer, in preparing plans and specifications, would consider that he was conserving the best interests of his client if he failed to apply the fundamental principles of mechanics to secure a structurally safe building.

"Can we say the same of architects and engineers as regards the fire protection features of the building. Yet the safety of the building from a fire view point is just as important as its structural safety, and far more so than its architectural or aesthetic appearance. Architects are not giving their clients buildings that are most economical in the end when they ignore or neglect the details that help to prevent serious fires. Now it is in this connection that I want the architects to think of that running tap in the basement—and before that tap can be effectively turned off we want to see.

- "(1) The use of combustible materials used in construction of buildings to be reduced to a minimum.
- "(2) The adequate protection of all structural parts liable to suffer by extreme heat.
- "(3) The use of constructional features and devices to prevent spread of fire within the building.
- "(4) The application of devices and constructional methods to afford protection from attack by fire from outside.
- "(5) The installation of systems for the extinguishing or notification of fire.

"Dealing with the first item, we find ourselves faced with a fire resisting or should it not be a fire-retarding building? With a view to encouraging the erection of this class of building, local underwriters have drawn up a Specification embodying details of fire-resistive construction. This specification deals with two classes

of construction, one in which steel stanchions and girders are used and the other having its entire structure built of reinforced concrete; the latter provisions following closely upon the Sydney Municipal Council's recently adopted by-laws governing reinforced concrete buildings.

"The underwriters' specification for fire-resisting construction, in addition to providing for minimum thicknesses for walls, floors and roofs, also sets forth requirements for all openings in external walls which are within 30 feet of any other building, to be protected by fire-resisting doors, steel roller shutters, or wired glass windows, the enclosing of lifts and stairways in isolated compartments having walls of a certain thickness of non-combustible material, with all openings from said compartments on to the various floors protected by automatic fire-resisting doors. For a building constructed on the lines enumerated above, discounts aggregating 25 per cent. off rates of premium for building and contents are allowed by insurance companies. It is very necessary, however, that the above requirements are faithfully carried out before the discount applies. We are often confronted with requests for allowances for fire-resistive features, which are below the required standard, and I am afraid we are sometimes subjected to harsh comment when approval and discounts are withheld, but as rules are generally made to be observed and not to be broken, I do not think that Underwriters should be considered arbitrary when they hold out for a standard which they honestly believe embodies the best principles of fire-resisting construction, based on the very latest experience. Some of the architects here to-night are more or less familiar with Underwriters' requirements in this matter, and I am pleased to say that the plans of some very fine so-called fire-proof buildings have recently been submitted for rating purposes. Within the past month, plans of a very large building were submitted for examination, and I had the pleasure of congratulating the owners for their enterprise and the architects on their opportunity in erecting what I believe will be the best fire-resistive building in this city, and I trust that this building may be the forerunner of many similar structures.

"As arguments in favour of fire-resisting construction the following facts may be mentioned:—

"Maximum of fire protection.

"Minimum cost of insurance.

"Minimum of disorganisation of business resulting from fire.

5th April, 1922.

"Reviewing these headlines in their order it might be mentioned that insurance offers no protection against fire. It affects the loss only. The insurance rate is materially reduced by making the building as nearly fire-resistive as possible. As regards the minimum disorganisation of business resulting from fire, I would refer to the £300,000 loss on the plant of Thomas Edison, Inc., West Orange, New Jersey. This was a most severe fire, in fact some of the reinforcing in the concrete actually melted—yet when the buildings had cooled down, portions were almost immediately re-occupied temporarily whilst repairs were made in other portions.

"On the other hand, however, there have been some remarkable losses in large fireproof buildings occupied for office purposes only. This class of building having a considerable amount of decorative external finish and internal embellishments is liable to heavy loss, if subjected to conflagration fire, as was instanced in the Continental Trust Building which was damaged in the Baltimore conflagration in 1904. This was a fourteen-storeyed building—the figures being as follows:—

"Sound Value	£205,000
Salvage	74,000
Loss	133,000 or 65%

"In these figures it will be seen that in buildings of ornate design and finish the fire damage will be considerable.

"After a great deal of digression we will now go on to the second sub-heading of this address, viz., the matter of protecting structural steel members against fire.

"I regret to state that we have numerous buildings in this city in which the steel members are either not protected by concrete or else are encased in a thin make-believe skin of cement. I might say, Gentlemen, that underwriters regard this act of omission as one of the worst features from a fire risk viewpoint, and we have had to charge adequate additional premium to cover this structural defect, and experiences of fires in buildings with unprotected steel members has proved that the severe view taken by us has not been unwarranted.

"The underwriters specify a thickness of at least three inches of concrete for stanchions and two inches for beams, applied in a prescribed manner. I am pleased to say that the neglect of this observance is not now so frequent.

"Returning to No. 3 headline, we will consider the subject of constructional features and devices tending to prevent the spread of fire within a building.

"Openings in Internal Walls."

"All openings in internal walls which have been erected for subdividing buildings into separate sections for the purpose of segregating hazardous storage or processes should be protected by fire doors, which should be double, that is, one on each face of the wall—in some cases single doors according to occupancy—information regarding which may always be obtained on inquiry.

"The only class of fire door approved locally is the door constructed of three or four layers of tongued and grooved non-resinous wood sheathed with tinned steel, and arranged to close automatically by the fusing of a link. Sliding doors are always preferable, as they are less liable to get out of order than the hinged doors. One very important point to be borne in mind by architects is that fire doors must conform to underwriters' specification before they can be accepted as effective cut-offs between buildings or sections of buildings. It is also important that the fittings of fire doors should be of wrought or malleable cast iron—I mention this because trouble has arisen of late owing to the use of ordinary cast iron fittings, which has caused a considerable loss of time to those concerned. Now as regards fire-division walls, let me strongly emphasise the value of a parapet wall as against the wall that merely extends up to the roof—I could instance many cases where the failure to build a wall with a parapet dividing the roofs has involved the owner and occupier of a building with either extra cost of insurance or else additional expenditure in altering the wall after the building has been completed. I would also here point out that steel roller shutters, steel plate doors, or wire glass windows cannot under any circumstances be accepted for protection of openings in dividing fire walls.

"Openings in dividing walls for shafting, steam or water pipes, electric conduit, are allowed without constituting communication, provided that said openings are no larger than required for the purpose they are used. Openings not exceeding eight inches diameter for chutes, spouts, screws, conveyors and such like, are also permitted. Any openings, however, other than above specified, must have fire door protection or its equivalent. I refer more particularly to openings for belt drives, rope drives, link belt conveyors and the like—this class of opening requires special treatment. I would like to stress the advantages to be gained by separating the non-hazardous sections of a building from the hazardous portions, also the location of certain machinery used in various manufacturing plants. Take for instance woollen mills, flour mills, tanneries,

hat factories, rubber works, woodworkers, and so on. It is impossible to lay down a general direction for the guidance of a body of architects in this connection for they would not be familiar with the processes of the manufactures referred to, but as an illustration of my point, I would tell you that in some cases the faulty arrangement of the various details of certain manufacturing risks would involve a possible 100 per cent. increase over normal insurance rate, which is wholly avoidable in the initial stages of the laying out of the factory. In special cases of this nature an architect is well advised to consult the insurance company or Underwriters' Association when getting out his sketch plans.

"We have so far dealt with the horizontal spread of fire, and will now pass on to the vertical spread of fire through stairways, lifts, shafts, light wells, chutes, belt drives, and so on. The spread of fire from floor to floor through stairways and lift shafts is most dreaded by fire underwriters, particularly if the lift be enclosed with light pine woodwork which catches fire, and aided by the induced draught, the fire spreads to the upper floors, whilst the burning embers fall to the floors below and thereby accentuate the hazardous conditions.

"An additional charge of 1/- per cent. for building and contents is made for lifts or hatchways extending through more than one floor of a building, this charge, however, may be avoided by enclosing the lifts in a brick or concrete shaft with the opening on to each floor being fitted with a standard automatic fire door or automatic steel roller shutter, which shall be kept closed during non-business hours.

"Even if lifts, hatches, or stairways be not enclosed with brick walls it is a distinct advantage to have same entirely enclosed with strong partitions of some slow burning or incombustible material. Although this protection is not accepted by underwriters, it affords a moderate degree of safety.

"Light well openings through floors should be avoided as a most undesirable feature, as they afford facilities for the spread of fire from floor to floor with almost incredible rapidity, and present one of the most dangerous weaknesses to be found in modern building construction from a fire prevention viewpoint. Light wells, moreover, involve an additional charge of 1/- per cent. on to insurance premiums.

"The Application of Devices and Constructional Methods to Afford Protection by Fire from Outside.

"Unprotected doorway and window openings in external walls are a constant menace to the fire under-

writer in the congested portions of our cities. These openings, particularly window openings, need protection, not only against attack by fire in other buildings, but also to prevent fire spreading from floor to floor through the medium of ordinary wooden window frames. Notwithstanding the external walls may be of substantial construction, if they contain window openings fitted with the usual combustible wooden frames glazed with ordinary thin glass, little or no resistance is offered to attack from outside.

"The problem of protection of external openings is more complicated than that of protecting openings in internal walls. The number of openings is usually considerable, thereby rendering the matter of adequate protection one of considerable expense, which will bring about drastic alterations by the owner in the specifications.

"The effective protection of external openings may be carried out by the various alternatives enumerated below:—

"Tin-clad Shutters.

Steel Roller Shutters.

Wired Glass Windows.

Drenchers or Water Curtains.

"The tin-clad shutters have their advantages and disadvantages, and although shutters of modern standard type will resist a high degree of heat for a considerable period and retain their form, they are subject to deterioration after a few years, owing to weather conditions; then again there is a matter of expense entailed in the opening and closing them each day, together with the responsibility incurred by the insured that same are duly kept closed during non-business hours. Moreover the installation of shutters prevents the ready detection of fire which may be burning inside the protected building.

"The same remarks also apply to the use of steel roller shutters, with the exception that as a form of protection, the steel roller shutter is somewhat inferior to the tin-clad shutter.

"We now come to wired glass windows, which are specified to a considerable extent in this city, although I regret to say that quite a large proportion of the wired glass window work here is much below underwriters' standard, and I have at times seen many hundreds of pounds expended in faulty wired glass window installations which did not benefit the owner a single penny so far as his insurance premium was concerned.

"Wired glass windows constructed strictly in accordance with the underwriters' specifications are accepted for protection of exposures in external walls,

and reduction in premiums are applicable in consideration of such protection.

"The wired glass window presents features which make it more acceptable than shutters for exposures. Unlike the shutter, its normal position is closed or else it is arranged to close automatically. Consequently the labour, expense and responsibility of closing is avoided. The deterioration and cost of maintenance is comparatively slight, and the first cost is not greatly in excess of the combined cost of ordinary wooden sashes and fire shutters. The wired glass being semi-transparent does not prevent the ready detection of fire, a feature not possessed by any other method of protection.

"On the other hand, wired glass is not absolutely perfect in-as-much as its heat-transmitting qualities may be a source of hazard when combustible stock in the building is stacked in close proximity to the windows—the same objection is met with when wired glass windows are fitted with textile blinds which are set on fire by the heat radiated through the glass, falling down, in turn set fire to nearby combustible material. An instance such as this occurred in a building in this city, within the past twelve months. Wired glass is sometimes objected to by owners owing to its semi-transparency, which objection, however, is counteracted by the resistance offered to the direct rays of the sun, and its prevention of 'street gazing' by employees—the latter factor being one to be reckoned with in these days of short hours and high wages.

"We shall now consider the matter of protection of external wall openings by drenchers, open sprinklers or water curtains. This is a system whereby the windows and other openings in external walls are kept wetted down by an installation of open sprinkler heads supplied from the city water main, and having a fire brigade coupling or an injector taking water from hydraulic mains as alternative secondary supplies.

"Drenchers are installed to protect a number of buildings in Sydney, and the installations have been used in several instances with sufficient success as to manifest their suitability for exposure protection. It is doubtful whether drenchers are as valuable as fire shutters or wired glass windows, for the reason that the water is not automatically controlled, and moreover at the critical time a water supply may not be available, but they constitute a useful auxiliary to wired glass windows. There are buildings in this city which have their window exposure protected both by wired glass windows and drenchers, one of these buildings even having drenchers on each of its four sides, including the street fronts, as a precaution against a

fierce attack of fire on the opposite side of a 66 feet street.

"The Installation of Systems for the Extinguishing and Notification of Fire."

"First and foremost coming under this heading is automatic sprinkler protection, a system with which the majority of you are familiar. As a certain amount of misapprehension exists regarding the functions of an automatic sprinkler installation, a brief description of the system may not be out of place.

"The units which comprise an automatic sprinkler installation include the water supplies, viz, the primary supply from the town's main, secondary supply from elevated tank, duplicate town's main, automatic pump or pressure tank, then come the check valves, main valves, alarm gong, and electric alarm signal connected to the fire station, the ranges of piping from six inch to one inch throughout the building, and lastly the little sprinkler heads, which, upon the fusing of its movable parts, distributes the water. Notwithstanding the fact that one sprinkler head is sufficient to protect 100 feet of floor area, the sub-division of the ceiling area into bays by means of beams having a depth of 6 inches or over, necessitates the variation of this rule. Consequently, it is advisable for architects to confer with the sprinkler engineers on this subject—for the faulty arrangement of bays might involve the installation of perhaps 30 per cent. more sprinkler heads than would normally be required by floor area.

"Instances such as this exist in the city, and I therefore deem it advisable to direct the attention of architects to this point quite apart from other features which may require special treatment, such as matters of elevated tank, position of valves, concealed piping, and such like.

"I would now like to say just a few words regarding installations of fire hydrants. Very often I am called upon to approve of hydrant services which fall below the required standard, due chiefly to omission to provide an outside coupling for fire brigade use, size of rising main too small, sub-standard fittings, such as valves, branches and nozzles. Fire hydrants, even if sub-standard, have involved a certain amount of expenditure, for which the insured get no return from the insurance companies in the way of discount, whereas, if at a slight extra cost, the installation complied with requirements, the usual discount would apply.

"I do not propose to touch on the matter of portable fire extinguishers, as it is not one which directly concerns architects, but will pass on to refer briefly to the

subject of devices for the notification of fire—which devices include thermostats. Various systems of thermostats are approved and listed by local underwriters, and as their functions are confined to the notification of fire by the ringing of an alarm gong outside the building affected and the dropping of a shutter and the sounding of an alarm at the fire station, installations of same are not considered to offer anything like the protection afforded by automatic sprinklers, which, in addition to extinguishing the fire, also give timely alarm of same.

"I would like to quote at this juncture the following paragraph, appearing in address delivered by Mr. Irving K. Pond, President of American Institute of Architects, delivered to the National Fire Protection Association, in 1910:

"A word as to certain specific architectural functions must be uttered, especially as it concerns a matter in which unenlightened and arbitrary rulings make or break. The architect is forever struggling to encompass beauty, to endow all his forms with grace and charm; otherwise he is no architect. In this he is not aided by the underwriters' rules, which tend more and more to make the objects to which they apply more crude and ungainly. This is especially so in the matter of frames and sash and the proportions of windows. So, too, with fire doors and the appliances and so with many matters. In many instances the matters might be adjusted by a commission were its ruling not to be negatived immediately by another commission. These suggestions are not uttered in a carping spirit, but to indicate that equity between man and man should be conserved; equity between associations and capital also. The ethical element will enter into the operations of even a Board of Fire Underwriters, and the aesthetic element will not down where the true architect is concerned; and so it must be apparent that questions of business ethics and personal fair dealing and questions affecting public taste, inhere in the problems of the fire protection and the insurance engineer and the powerful associations they in general so wisely represent."

"This situation referred to by Mr. Pond is a difficult one, and has frequently cropped up in our own experience, and I might state that to meet such cases we have provision in our specifications to cover these contingencies which occur from time to time, although I might point out that only such deviations as would be consistent with safety are permitted.

"Let us once more consider the position as between architect and client. As a rule the architect is required

to produce a building exactly as his client desires. The client having no knowledge of the strength and the lasting properties of building materials naturally entrusts these details to his architect. In some cases, however, it is likely that a client, on the score of economy, whittles away the specification with a result that you are getting mighty near to an unstable structure, and I am sure that no architect would shoulder the responsibility of such a building. Is it not equally the duty of the architect to take such a stand; when the client proposes to erect a building which through risk of fire constitutes a menace not only to its owner and occupants but perhaps to the whole city?

"No body of men other than the architects is in a better position to assist in the reduction of avoidable fire waste.

"In presenting the foregoing remarks, it is hoped that they will promote the hearty co-operation of those architects who are desirous of conserving the best interests of the clients individually and the community generally, as the adoption of the precautions recommended by fire underwriters will play an important part in the reduction of fire waste, and consequently enhance the financial prosperity of the country.

"To this end, fire underwriters therefore eagerly anticipate a closer co-operation between their experts and the architects.

"I thank you, gentlemen, for your courteous attention, and will conclude my rambling remarks by again reminding you of the tap that is running to waste."

Professor Leslie Wilkinson proposed a vote of thanks to the lecturer, which Mr. D. Esplin seconded.

Messrs. J. E. Justelius, R. W. Pickering, G. Sydney Jones, J. A. Kethel, B. J. Waterhouse, G. A. Roberts, C. W. Chambers, E. Lindsay Thompson, and J. S. Adam, supported the vote, and asked a number of questions.

Mr. T. A. Ogden, in replying to the various questions arising out of the discussion, said that in adopting precautions for the safety of a building against fire, it naturally followed that the safety of the occupants of the building is to a great extent provided for. That all specifications and printed matter pertinent to the subject of improvement of Fire Risk in buildings could be seen on personal application to him, and all inquiries would be completely answered and assistance rendered. In the case of the severe fire loss at the plant of Thos. A. Edison, Inc., New Jersey, U.S.A., certain of the reinforced concrete buildings failed badly, but the reason for failure might be assigned to

the fact that the buildings were erected a number of years before the design of reinforced concrete was standardised and to faulty workmanship in having the reinforcement badly spaced and too near to the exposed surfaces of beams and columns—the columns especially showing very bad details.

Furthermore, the heavy damage was contributed to by the heat attained in this fire, which was exceptionally high, and it continued from one to three hours owing to the quantity of inflammable materials and lack of water. Evidence of temperatures ranging from 2,000 to 2,500 degrees and probably higher was found in many places. There were instances of fused concrete, and reinforcing bars were also found to have been melted.

With regard to the matter of fire escapes from buildings, the standard form of fire escape should be constructed on the principle of an isolated tower, where the occupants of the building would gain confidence by first being brought into open air and then descend a fireproof stairway in safety. Standard fireproof doors are compulsory on each side of a wall, which is looked upon as an adequate fire break, whilst steel shutters on one side of a wall opening, might be allowed only in an unimportant wall, which would not be regarded as an effective fire stop.

Regarding the question that had been raised as to the possible failure of installations of automatic sprinklers, Mr. Ogden stated that there had been instances of complete failures of sprinklers or heavy fire or water damage in buildings, protected by automatic sprinklers due to a number of causes, including explosion, severe exposure in conflagrations, water supply being turned off at the time of the breaking out of the fire, the sprinkler installation not being extended to protect additions which had been erected subsequent to the installation of the sprinklers, and various other abnormal conditions.

The President conveyed the vote of thanks to Mr. Ogden, which was carried by acclamation, and the chair added personal thanks for the lecture and the reply.

Federal Scale of Professional Charges.

The President, Mr. G. H. Godsell, then moved, and the Vice-President, Mr. B. J. Waterhouse, seconded, the following motion, of which due notice had been given:

"That this Institute adopts *pro formâ* the Federal scale of Professional Charges until the I.A.N.S.W. revised code has been accepted by the Federal Authority."

Mr. Godsell explained that when he, with Mr. Waterhouse, attended the Federal Council A.I.A. in Melbourne, in February last, as Delegates from the

I.A.N.S.W., it was discovered that the Federal scale of professional charges had been adopted by the Council at its previous annual meeting. It was not in the power of the N.S.W. Delegates to change what had already been done, notwithstanding that the N.S.W. revised code was admitted by the Federal Council to be superior to the Federal scale. The N.S.W. Delegates had either to adopt the Federal scale *pro formâ* or to secede from the Council, and by so doing render null and void the work of years preceding.

Mr. Waterhouse also spoke, and said that there would be no difficulty at all about the other States adopting the N.S.W. revised code, because it would be better for the practitioners generally.

Mr. C. W. Chambers and Mr. J. A. Kethel spoke against the motion.

Mr. E. Lindsay Thompson moved as an amendment to the motion, and Mr. G. A. Roberts seconded:

"That if the Federal code of charges be adopted *pro formâ*, the date of same taking effect be after the date of the next Federal Council, when the revised code has been adopted by all States."

Mr. R. W. Pickering moved a second amendment as follows:—

"That this Institute endorses the acceptance by the States of Victoria, South Australia and Tasmania of the Federal Code of Charges approved by the Delegates of those States; but until the N.S.W. Code of Charges, now under revision, have been considered, and it is hoped adopted, by the other States as the Federal Code of Charges, the Members of this Institute to continue to operate in accordance with the Code of Charges of the Institute of Architects of N.S.W."

The President accepted Mr. Pickering's amendment, and Mr. Thompson withdrew his amendment.

Mr. Pickering's amendment was then seconded by Mr. G. A. Roberts, put to the meeting, and carried on the voices.

The meeting terminated at 9.45 p.m., and the President announced that he would deliver his postponed address on the occasion of the next general meeting, on June 13.

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
Auckland Citizens' War Memorial	30/6/22	Approved
N. S. War Memorial	—	Approved.

June 15th, 1922

Architecture

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1923		I.A.N.S.W.		R.I.B.A. Intermediate		R.I.B.A. Overseas		R.I.B.A. Final	
		No.	Candidates	No.	Candidates	No.	Candidates	No.	Candidates
February									
Tuesday	20	—	—	—	—	Design ...	10—1.30 2.30—5.30	Design ...	10—1.30 2.30—5.30
Wednes.	21	—	—	—	—	Design ...	10—1.30 2.30—5.30	Design ...	10—1.30 2.30—5.30
Thursday	22	—	—	—	—	Design ...	10—1.30 2.30—5.30	Design ...	10—1.30 2.30—5.50
Friday	23	A	Principal Styles, and General History of Architecture 10—1.30 2.30—5.30	A	Principal Styles and General History of Architecture. 10—1.30 2.30—5.30	—	—	—	—
Monday	26	B 1	Simple Applied Construction in elementary design, and the properties and uses of ordinary building materials. 10—1.30	B 1	Simple applied Construction in elementary design and the properties and uses of ordinary building Materials 10—1.30	B 1	Construction, including iron and steel construction, ferro-concrete shoring and underpinning. 10—1.30	B 1	Construction, including iron and steel construction, ferro-concrete shoring and underpinning. 10—1.30
		B 2	Theoretical, including Stresses and Strains. 2.30—5.30	B 2	Theoretical including stresses and strains 2.30—5.30	B 2	Construction, do do 2.30—5.30	B 2	Construction, do do 2.30—5.30
Tuesday	27	C 1	Historical Architecture. 10—2	C 1	Historical Architecture or Mechanics and 10—2	C	Hygiene, including drainage, ventilation, heating, lighting and water supply. 10—12.30	C	Hygiene, including drainage, ventilation, heating, lighting and water supply. 10—12.30
		C 2	Mathematics and Mechanics 10—2	C 2	Mathematics and Mechanics 10—2	D	Properties and uses of Building Materials. 1.30—4.0	D	Properties and uses of Building Materials. 1.30—4.0
		C 3	Design ... 10	C 3	Design ... 10	E	Ordinary practice of Architecture, including Specifications and the Law of Contracts. 4—5.30	E	Ordinary Practice of Architecture, including Specifications and the Law of Contracts. 4—5.30
Thursday	1	Oral ...	10	Oral ...	10	Oral ...	2	Oral ...	2
Friday	2	Oral ...	10	Oral ...	10	Oral ...	2	Oral ...	2

NOTES—1. Applications, Fees, Certificates, Testimonies of Study, Theses, Problems in Design, etc., must be delivered to the Secretary by 12 noon on Saturday, 20th January, 1923.
 2. Candidates are advised to send in the Testimonies of Study etc., as soon as possible, so that if they should not prove to be of sufficient merit others may be prepared.
 3. Candidates for all Examinations must bring with them imperial drawing boards, tee and set squares, instruments, drawing pins etc., in short, every requirement except writing ink, writing, tracing and drawing paper.

The Examinations will be held at Sydney Technical College, Harris Street, Ultimo in the Architectural Department
 1st June, 1922

JOHN J. LOUGH, Sec., I.A.N.S.W. 5 Elizabeth St., Sydney

FEDERAL COUNCIL OF THE AUSTRALIAN INSTITUTES OF ARCHITECTS

Minutes of Extraordinary Meeting held at the Rooms of the Royal Victorian Institute of Architects, Melbourne, on Friday, February 3rd, 1922, at 9.45 a.m.

Present: There were present L. Laybourne-Smith (President), South Australia; G. H. Godsell and B. J. Waterhouse, New South Wales; K. A. Henderson and Frank Stapley (Hon. Secretary and Treasurer), Victoria; A. H. Masters, Tasmania; R. Martin Wilson, Queensland; and W. M. Campbell (Assistant Secretary).

The President stated that the personnel of the Council for the ensuing year, as appointed by the various Institutes was as follows:—New South Wales: G. H. Godsell, 14 Martin Place, Sydney; B. J. Waterhouse, 2 Hunter Street, Sydney. Victoria: K. A. Henderson, 352 Collins Street, Melbourne; Frank Stapley, 101 Swanston Street, Melbourne. South Australia: L. Laybourne-Smith, Steamship Buildings, Currie Street, Adelaide; Chas. W. Rutt, Currie Street, Adelaide. Queensland: R. Martin Wilson, City Buildings, Edward Street, Brisbane. Tasmania: A. Harold Masters, A.M.P. Buildings, Cameron Street, Launceston; Bernard R. Walker, Macquarie Street, Hobart. Western Australia: To be represented by Alan C. Walker, Collins Street, Hobart.

A letter was received from Mr. Alan C. Walker expressing regret that he would be unable to be present at the meeting in Melbourne to represent Western Australia.

Minutes of the Annual General Meeting, held September 28th to October 2nd, 1920, were laid on the table.

Canberra.

The President, referring to the reports of the Advisory Committee for the Federal City, read extracts of correspondence from various Ministers, containing promises that the Federal Council should be consulted when important buildings were contemplated. He had arranged for the Minister for Commonwealth Works and Railways (Hon. R. W. Foster) to receive a deputation of the Council at 11.30 a.m. A general discussion ensued, and the following points were noted for submitting to the Minister: That the plan of the city, showing areas for settlement, had been omitted

from the report. That the Minister be asked to appoint a representative of the Institutes of Architects on the Advisory Committee. That the Council would like to be assured that the plans for the layout of the capital as prepared by Mr. Burley Griffin were being adhered to. The meeting then adjourned to wait on the Minister.

MEETING OF THE COUNCIL

held on Friday, February 3rd, at 2 p.m.

Present: The President (Mr. Laybourne-Smith), Messrs. Godsell, Waterhouse, Henderson, Masters, Wilson, and the Assistant Secretary (Mr. Campbell), *Canberra.*

It was decided to deal with the result of the deputation at a meeting to be held in the evening.

Tasmanian Meeting.

The President explained that it had been impossible to obtain a quorum at the meeting on January 19th at Hobart, as members from other States found they could not attend, and after lengthy correspondence with representatives he had called this meeting as an extraordinary meeting. He thought that they might dispose of the business now overdue for an annual meeting, and ask the State Institutes to accept the decisions as those of an annual general meeting. He regretted very much having to disappoint Tasmania.

Mr. Masters said he regretted that the meeting could not be held in Hobart, as arranged, but understood the difficulties. He was of opinion that for the successful conduct of the Council the annual meetings would have to be held in Sydney and Melbourne.

Mr. Henderson moved, seconded by Mr. Godsell, that in view of the circumstances, this be regarded as the annual general meeting of the Federal Council, and the State Institutes be asked to approve of its actions. Carried.

President's Report.

The President asked that in view of the necessity of disposing of the business within the two days available for the meeting, he be excused presenting a formal report. Approved.

An audited statement of receipts and expenditure was submitted, and adopted on the motion of the President, seconded by Mr. Henderson.

The following accounts were passed for payment: Petty cash and postages, £4 2s. 3d.; audit fee, £1 1s.; Assistant Secretary (secretarial fee), £10 10s.; total, £15 13s. 3d.

Standard Articles of Association.

The members reported as to the position of the respective Institutes regarding the Standard Constitution, the result being that the Institutes in New South Wales, South Australia, and Tasmania had adopted and were using the new Constitution. Victoria had adopted it, and would work under it after confirmation at the next meeting, to be held within two months. From Queensland and Western Australia no reports were available.

one-eighth per cent. and one-tenth per cent. is too high in cases where the investigation is simple.

It was resolved that in Clause 11 the words "the maximum charge shall be" be inserted before the words "for the next £9,000."

Constitution.

The President asked members to examine the Constitution under which the Federal Council is working, and taking into consideration the successes and difficulties met with, to make such recommendations for amendments as appeared necessary.

Mr. Henderson moved, seconded by Mr. Wilson, that in Clause 5a the words "who shall be a member of the Institute of Architects of that State" be added after the word "Institute." Carried.

STATEMENT OF RECEIPTS AND EXPENDITURE

from September 20th, 1920, to December 31st, 1921.

RECEIPTS.				EXPENDITURE.			
		£	s. d.			£	s. d.
By Balance at Commonwealth Bank at 20/9/'20				To Stationery and Typing		7	11 9
" Levies—			42 17 6	" Photographs		3	3 0
Royal Victoria Institute of Architects	15	10	0	" Postages, Petty Cash, Bank Charges		3	10 0
Institute of Architects of N.S.W.	17	0	0	" Balance at Commonwealth Bank at 31/12/'21			14 4 9
West Australia Institute of Architects—							
1918-19	4	7	6				
1920-21	4	16	6				
			41 14 0				
" Sales of Photographs			2 10 0				
			£87 1 6				£87 1 6

Melbourne, February 3rd, 1922.

Audited and found correct.

BRENTNALL, MEWTON & BUTLER, F.C.P.D., Auditors.
FRANK STAPLEY, Hon. Secretary and Treasurer.

Scale of Professional Charges.

Representatives reported as to the operation of the scale of charges prepared at the last annual general meeting of the Council. The Institute in South Australia had adopted the scale and brought it into operation. The Institute in New South Wales had adopted it, with the exception of the valuation charges, which were being considered by their lawyers. The Victoria Institute adopted the scale, and would bring it into operation with the change in the Constitution. The Tasmanian Institute had adopted the scale.

The valuation clause (No. 11) was then discussed, and the opinion generally expressed that the charge of

Mr. Godsell moved, seconded by Mr. Waterhouse, that the words "during May and June" be deleted from Clause 15. Carried.

Mr. Godsell said that previous discussion had indicated that members thought that the annual meeting should be held in Melbourne or in New South Wales. With this in view, Mr. Masters moved, seconded by Mr. Wilson, that the second paragraph of Clause 16 be altered to read as follows: "The annual meeting shall be held in such State of the Commonwealth as the Council shall determine." Carried.

Travelling Expenses.

The matter of travelling expenses of delegates to

meetings of the Federal Council was discussed, and it was resolved that the various Institutes be asked to make suggestions for the reimbursement of travelling expenses, bearing in mind the decision of the Council that annual meetings would have to be held at places near the seat of the Federal Government, and that the expenses of the delegates from distant States would necessarily be heavier than of those more centrally placed.

National War Memorials.

Members reported:

New South Wales: That it had been decided that the memorial should take the form of a Memorial Hall. The Institute had been asked to report on the proposed site and type of building.

Victoria: Two sites had been chosen, and a competition would be called for designs. The Institute had been asked to assist in preparing the conditions.

South Australia: The matter had been referred to a Select Committee of Parliament, and the Institute had not been able to make its opinion felt.

Queensland: That efforts had been made to acquire a square within the city. The Institute had taken part in the effort.

Tasmania reported that various small memorials had been erected.

It was resolved to ask members to amplify the reports and forward same to the Secretary, and that Mr. Sydney Jones be asked to draw up a report on same.

Competitions.

It was resolved that members of this Council take every opportunity to press upon their Federal and State representatives the necessity of calling for competitive designs for all work in connection with the public buildings of the Commonwealth and State.

Bronze Medals.

The President reported that three theses had been received, and were being dealt with by the Assessors.

Mr. Henderson moved that Messrs. G. Sydney Jones, W. H. Bagot, and W. R. Butler (the present Assessors) be asked to suggest a suitable subject for next year's competition and act in the same capacity as previously. Carried.

Proceedings.

Mr. Waterhouse moved that the Proceedings up to date be printed, and that the amount of the levy be increased to 3s. 6d., and that the Institutes be informed that the extra charge is for printing proceedings. Carried.

Mr. Laybourne-Smith was deputed to have the proceedings printed, the cost being estimated at £50.

It was resolved that the Secretary of each State Institute be asked to forward to Federal Ministers in respective States copies of Federal Council Proceed-

ings, underlining matters affecting the various departments.

General Business.

On the suggestion of Mr. Wilson the Secretary was instructed to write to the Columbia University Architectural Library for information *re* indexing architectural libraries, and when this information is forthcoming to supply same to the State Institutes, in order that a uniform system of classification may be adopted, and that the index of each Institute Library be made available to other States.

The meeting then adjourned.

MEETING OF THE FEDERAL COUNCIL

Held on Friday, February 3, at 8 p.m.

Present: L. Laybourne-Smith (President), G. H. Godsell, B. J. Waterhouse, W. A. Henderson, A. H. Masters, R. Martin Wilson, and the Assistant Secretary.

Canberra.

Copies of the First General Report of the Federal Capital Advisory Committee were received from the Minister of Works and Railways. The Council gave careful consideration to the report, and noted that a plan referred to as marked "F" in the list of appendices had been omitted from the report, and that it was impossible, therefore, to compare the areas for settlement as recommended by the Advisory Committee with the graph indicating the expenditure on the various buildings proposed to be erected during the next three years. It is true that the report contained a sewerage plan, with two areas on the north and south of the centre which are allocated as population areas, but no detailed layout of those areas has been made available.

The graph indicates that sums are proposed to be expended on architectural works, as follows: Parliament House, £110,000; residential accommodation for Governor-General, members of Parliament, and hostel, £149,500; offices for central administration, £116,400; cottages for civil servants, £330,000; hostels for civil servants, £153,900; buildings for civic administration, £93,200; apart from minor sums, making a total of nearly £1,000,000, or inclusive of engineering works, £1,799,000.

The Council assumed from the report of the Advisory Committee that this enormous expenditure is not to be made on buildings of a temporary character, and it was soon realised that if the money is expended on buildings of a permanent nature, those buildings must constitute immediately an architectural nucleus that will have a controlling effect upon all future buildings at Canberra. The Council was emphatic that it

should be clearly realised that whether the work to be carried out in connection with these buildings is part of the monumental structures or merely cottages; each or either should be treated as a unit in a complete architectural conception, and the layout of the "population areas" should be on proper architectural lines. For this reason details of all proposals should be made available, in order that the public may have an opportunity of criticising the scheme.

The report indicates a portion of the population area to the south which appears to reach a point within some 300 yards of the outer circle of capital centre, so that it must be presumed that portion of the proposed residential area will have to be demolished to provide space for the development of the city. The detail drawing missing from the report might remove the unfavourable impression that the general plan creates. The position of the proposed hostel is not shown, and the building to cost some £149,500 might be expected reasonably to become a dominating feature. The Council expressed apprehension as to the effect that these buildings would have upon the final scheme for the Houses of Parliament and other monumental buildings. How can these temporary buildings be designed as subordinate to structures the character of which remains absolutely undetermined?

The Federal Council recorded its regret that a building scheme of such national importance as Canberra should continue to be developed without the assistance of representatives of the architects of the Commonwealth. The Council has frequently offered that assistance to the Government, and it is a fitting climax to the lack of understanding of what that assistance would mean that the Federal Council Advisory Committee should not contain the name of an architect whom the profession throughout Australia will accept as its representative.

MEETING OF THE FEDERAL COUNCIL

Held on Saturday, February 4, at 12 Noon.

Present: The President (L. Laybourne-Smith), G. H. Godsell, B. J. Waterhouse, K. A. Henderson, A. H. Masters, and R. Martin Wilson.

Canberra.

The Council noted press reports of deputation to Minister of Works and Railways.

A copy of the notes of the deputation was received from the Private Secretary to the Minister.

It was resolved: "That the report of deputation and notes of the attitude of the Council towards the proposals of the Advisory Committee on Canberra be typed for circulation amongst members present at the meeting, and Mr. Godsell be empowered to prepare a report and arrange for publication in the press." Carried unanimously.

Printing Federal Scale of Charges.

The President was instructed to have 800 copies of the Scale of Charges printed and forwarded for use of respective Institutes.

Election of Office-Bearers, 1922-23.

Election of President.—Mr. Henderson moved, and Mr. Laybourne-Smith seconded, that Mr. G. H. Godsell be President for the year 1922-23. Carried unanimously.

Election of Hon. Secretary and Treasurer.—Mr. Laybourne-Smith moved, and Mr. Masters seconded, that Mr. B. J. Waterhouse be Hon. Secretary and Treasurer for the year 1922-23. Carried unanimously.

Executive.

It was resolved that the office of the Executive for the ensuing year be at No. 5 Elizabeth Street, Sydney, and that Mr. J. J. Lough be Assistant Secretary. Carried.

Banking Account.

It was resolved that authority be given to change the names of the officers operating on the bank account to comply with the election at this meeting, and to transfer the account to Sydney.

Next Annual Meeting.

It was resolved that the next annual meeting be held at Sydney.

Motions of thanks for valuable services rendered by President, Secretary, and Assistant Secretary were carried with acclamation, and the new President and Secretary were accorded the congratulations and best wishes of the Council.

Confirmed.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

*An Exhibition of Contemporary British Architecture will be held in the Galleries of the Royal Institute,
9 Conduit Street, W.1., London, from November 1st to December 16th, 1922.*

The following arrangements have been made for the organisation of the Exhibition:—

- (1) All Architects in the British Empire are invited to submit their work.
- (2) Work that has already been exhibited elsewhere will not be excluded.
- (3) Exhibits must be confined to works executed or illustrations of works projected since the beginning of the twentieth century.
- (4) All exhibits must be framed and may be glazed.
- (5) There is no limit to the number of works which may be included in one frame.
- (6) Models will not be accepted for exhibition.
- (7) Exhibits may consist of photographs, elevations, perspective drawings, and small scale plans. The exhibitor may choose whether he will send any or all of these. Photographs of drawings are admissible.
- (8) As the available wall-space is very limited it is anticipated that not more than 15 square feet of wall-space (inclusive of frames) can be allotted to any exhibitor.
- (9) Charges for packing and transport of exhibits to and from the Exhibition must be defrayed by the exhibitors.
- (10) An insurance policy will be taken out for the exhibits while they are in the custody of the R.I.B.A., but the R.I.B.A. will incur no legal liability for loss or damage.
- (11) The last day for the receipt of drawings and photographs will be October 7th, 1922.
- (12) All exhibits not accepted must be removed by exhibitors not later than October 22nd, 1922.
- (13) The Exhibition will be open to the general public (free), between the hours of 11 a.m. and 6 p.m.
- (14) There will be a Press View on October 30th and the Private View and Opening will take place on November 1st, 1922.

INSTITUTE LIBRARY

Library Rules for Borrowers.

1. If a book is lost or stolen from a borrower, or if the same is not returned by him within fourteen days, from the date of issue, he shall replace it, or pay to the Council the full value of such book. In case of the book being part of a set or series, and the borrower neglecting to return the same within fourteen days as aforesaid, or being unable to replace the same, in consequence of its having been lost or stolen, he shall pay to the Council the full value of the whole set or series.

2. A borrower shall keep the books borrowed by him from the Library clean and in good condition, and shall not tear, nor turn down the leaves, nor mark, nor deface, damage, or injure the book in any way.

3. If a book is torn, damaged, marked, defaced, or injured while lent to a borrower, such borrower shall, within one week of notification from the Council, replace the book, or pay to the Council the full value

of the book; or, in case it is part of a set or series, and he shall not replace the said book, the full value of the whole set or series.

In cases where the book is replaced the borrower shall be entitled to the injured book.

4. A borrower shall be entitled to borrow only one book at a time, but at the discretion of the Council two volumes of one work may be issued at the same time.

5. A borrower shall return any book borrowed at the latest within fourteen days after the date of issue; but books may be renewed upon application at the discretion of the Council.

6. If a book is not returned within the time prescribed by the preceding rule, the borrower shall pay the sum of sixpence for each and every day the book is retained beyond the prescribed time.

7. Certain volumes may not be removed from the Library, and are for reference only.

LIST OF BOOKS

The following is a catalogue of books in the Institute Library. Reference can be made to same on application to the Secretary.

31. Greek Architecture—Brown, E. A.
92. Classic Architecture, folio plates—Mitchell, C. F.
101. Rome—Taylor, G. L., and Cresy, E.
108. The Architecture of Palladio.
32. Norman Architecture—Brown, E. A.
34. Gothic Architecture—Brown, E. A.
36. Abbey Church of St. Albans—Buckler, I. E., and C. A.
- 42-43. Memorials of Cambridge, 2 vols.—Le Keux.
- 47-50. The Antiquities of Scotland, 4 vols.
51. Abbeys of Teviotdale.
52. Details of Gothic Architecture—Colling, J. K.
- 53-55. Examples of Gothic Architecture, 3 vols.—Pugin, W.
- 56-57. Analysis of Gothic Architecture, 2 vols.—Brandon, R. and J. A.
- 67-69. The Ecclesiologist, 3 vols.
77. Paley's Gothic Moulding—Fawcett, W. M.
102. Worcester Cathedral—Wild.
91. Gothic Architectural Parallels—Sharpe.
99. Views of Houghton.
110. Mansions of England in the Olden Times—Nash, J.
106. Architectural Remains of the Reigns of Elizabeth and James.
- 35-36. Public Buildings of London, 2 vols.—Pugin and Britten.
- 38-39. Churches of London, 2 vols.—Godwin and Britten.
93. Plans, Elevations and Sections of Buildings—Soane, J.
100. The Works of Inigo Jones—Triggs, H. E., and Tanner, H.
- 96-97. Later Renaissance Architecture in England, 2 folios—Belcher, F., and McCartney, M. E.
95. English Interior Woodwork—Tanner, H.
21. The Art of the Plasterer—Bankart, G. P.
- The Decoration and Furnishing of Town Houses—Edis, R.
46. The Art and Craft of Garden Making—Mawson, T. J.
89. Detail and Ornament of the Italian Renaissance—Oakshot, G. J.
- 85-88. Die Renaissance in Italy, 4 folios—Schutz, A.
- Architectural Styles—Rosengarten, A.
73. The Story of Architecture—Waterhouse, P.
79. History of Architecture—Fletcher, B. F.
90. Architecture—Juone.
70. Palaces of Nineveh and Persepolis—Ferguson, J.
83. History of Ancient Architecture—Ferguson, J.
82. History of Modern Architecture—Ferguson, J.
84. History of Medieval Architecture—Ferguson, J.
33. History of the Gothic Revival—Eastlake, C.
38. Rickman's Gothic Architecture—Parker, J. H.
44. Gothic Architecture in England—Bond, F.
71. History of Architecture (Gothic and Renaissance)—Smith & Poynter.
75. Concise Glossary of Architecture—Parker, J. H.
76. Introduction to the Study of Gothic Architecture—Parker, J. H.
- 26-27. History of Renaissance Architecture in England, 2 vols.—Blomfield, R.
28. Early Renaissance Architecture in England—Gotch, J. A.
41. Gwilt's Encyclopedia of Architecture—Papworth, D. W.
- 58-67. Dictionnaire Raisonne de l'Architecture Francais—Viollet-le-Duc, M. E.
105. Plans of Sydney—Done, H. P.
105. Who's Who in Architecture.
1. Strength and Elasticity of Australian Timbers—Warren, W. H.
7. Building Materials—Middleton, G. A. T.
- 22-25. Modern Buildings, 4 vols.—Middleton, G. A. T.
- 15-16. Building Construction, 2 vols.—Mitchel, C. F.
20. Modern Practical Joinery—Ellis, G.
12. Shoring and Underpinning—Hadder-Stock, C.
18. Specification in Detail—Macey, F. W.
- Australian Building Practice—Nangle, J.
13. Practical Science for Plumbers and Engineers—Wright-Clarke, J.
17. The Plumber and Sanitary Houses—Hellyer, S. S.
19. Sanitary Engineering—Moore, E. C. S.
6. Australian Building Estimator—Jefferies, W.
- Builder's Price Book, 1910—Lockwood.
- Redress by Arbitration—Foulkes-Lynch, H.

107. Sterography, A Complete Body of Perspective—Hamilton, F.
10. Accoustics of Public Buildings—Smith, T. R.
- 5-9. Principles of Plane Géometry and Projection, 2 vols.—Angell, H.
2. Principles of Architectural Perspective—Middleton, G. A. T.
11. The Elementary Principles of Graphic Statics—Hardy, E.
45. Architectural Drawing—Spiers, R. P.

The following Periodicals and Journals are also available:—

Journal of Proceedings of the *Royal Institute of British Architects*.

Journal of Proceedings of the *American Institute of Architects*.

Journal of Proceedings of the *Architectural Association, London*.

Journal of Proceedings of the *Natal & Transvaal Institutes of Architects*.

Journal of Proceedings of the *Japanese Institute of Architects*.

The British Builder.

BOOKS ADDED TO LIBRARY

FROM THE COLLECTION OF THE LATE ARTHUR PRITCHARD ESQ.

These Books have the Imprint.

Masonry, Bricklaying and Plastering Burn
How to Estimate Rea
Specifications in Detail Macey
Building Specifications Leaming
Old Cottages and Farm Houses .. Davie & Dauber
Commonsense Homes Sills
Treatise on Architecture Ashpitel
Book of Country Houses Newton
Architectural Parallels Sharpe
Book of Houses Newton
Architectural Iron and Steel Birkmire
Law of Fire Insurance Colenso
School Architecture Robson
Principles of Planning Marks
High Office Buildings Birkmire

These Books are without the Imprint.

Architectural Examples in Brick, Stone, Wood and Iron.

Engineers' Standard Catalogues, 1919-1922—

Engines and Boilers.

Pumps, Machinery and Plant.

Sanitation, Heating Construction.

Electrical.

British Standard Exporter, 1919-1921—Hardware, Earthenware, Leather.

British Standard Exporter, 1920-1921—Furniture, Music, etc.

Municipal Engineers' Specification.

Colonial Compendium and Export Catalogue, 1920.

Colonial Compendium and Export Catalogue, 1921.

BOARD OF ARCHITECTURAL EDUCATION

*Revised Testimonies of Study to be Submitted by
Candidates for the Intermediate Examination in lieu
of the present Testimonies.*

- 1 and 2. Two sheets showing the application of one or more of the orders of Architecture to a building. A general drawing of the building to be given on one sheet with details on the second.
- 3, 4, and 5. One sheet of details of Classic Ornament from the round, or one sheet of Mediæval Ornament—freehand drawing, drawing from the round. Two sheets of

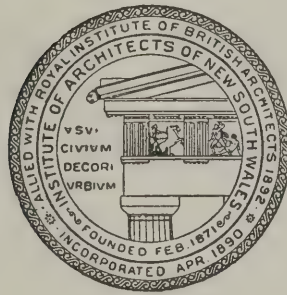
measured drawings of an existing building or portion of a building, to be selected by the candidate, with the plottings and sketches.

- 6, 7, and 8. Three sheets of working drawings of a building of moderate dimensions, showing clearly the construction of floors, roofs, joinery, etc. The general drawing to be drawn to the scale of 8ft. to 1in., with ½in. and full-size details.

NOTE.—This accords with April 15th edition "Architecture," page 54.

ARCHITECTURE

THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



JULY 15TH
1922

VOL 11. No. 7

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INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

MINUTES OF AN ORDINARY GENERAL MEETING

Held at the Royal Society's Hall, 5 Elizabeth Street, Sydney, on Tuesday, 13 June, 1922 at 7.30 p.m.

Present: Mr. G. H. Godsell (President) in the chair, and seventy members and visitors, the latter including the Lord Mayor (Alderman W. P. McElhone, M.B.E.).

Minutes.—The minutes of the Ordinary General Meeting of 9th May were taken as read, and confirmed.

Apologies.—Apologies for unavoidable absence were tendered by Messrs. G. Sydney Jones, D. Esplin, A. F. T. Somerville and H. V. Vernon.

Election.—Sixty ballot papers had been received for the election or rejection of Mr. Dawson Reeves as Fellow, and of Messrs. Oscar Alexander Beattie, A.R.I.B.A., Alan Edgecliff Stafford and Bengt Tojkander, Member of Architects' Association, Finland, as Associates.

The Scrutineers were Mr. H. C. Day and Professor Leslie Wilkinson, and all the candidates were declared elected.

Martin Place Extension.—Mr. E. R. Green asked whether any General Meeting of the Institute had passed a resolution against the extension of Martin Place from Castlereagh Street to Macquarie Street.

The President replied that at the General Meeting of 11th June, 1920, a resolution was carried against the proposed extension of Moore Street. He said that the only argument for the extension was that adduced by Dr. Mary Booth at a recent deputation to the Premier, namely: "That they wanted a main artery in the city for patriotic demonstrations and parades." He also said that many schemes were more urgent, namely, the continuation of Elizabeth Street to avoid the dangerous turn at Hunter Street, and the widening of Park Street.

Valedictory to Mr. S. G. Thorp.—The President said a few well-chosen words to Mr. S. G. Thorp on the eve of his leaving for America, and referred particularly to the honorary work undertaken by him as Secretary for the Institute's Practice Committee, especially in the preparation of a revised scale of professional charges.

Mr. Thorp made the following reply:—

"I have to thank you most sincerely for all the good things you have said about me when proposing my toast and wishing me success and pleasure in the educational holiday tour to America that I propose to make.

"You were good enough to refer to my work for the Institute. I fear me that most of what you said was prompted far more by your own natural courtesy and kindness of heart than by any services I may have rendered.

"I would like to say that, for whatever of time or of effort I have devoted to the affairs of the Institute, I have been very much more than repaid by the pleasant association with some of my fellow members to which this work has led. There are quite a number of men—men whose work and professional activity I have always admired, who were strangers to me when I first joined the Institute—between whom and myself there now exists a warm personal friendship; these friendships have been, indeed, cheaply purchased by the little time and effort I have devoted to the secretaryship of the Practice Committee.

"Needless to say, I am looking forward to this trip with much pleasure and great anticipation. I am going on my tour with the eyes of youth, eager to gain all the knowledge and acquire all the experience that the opportunity provides, happy in the hope that I shall return, not to reproduce here what I may see in America, but, better equipped through my study of the way in which our friends on the other side of the Pacific have solved theirs, to solve those building and architectural problems in Australia that may come into my hands.

"I thank you again, Mr. President, for the kindly thought and good wishes you have expressed towards me when giving the toast, and I appreciate, more than I can say, the hearty way in which the members present endorsed, by their reception of the toast, what you said."

Presidential Address.—Mr. G. H. Godsell delivered an address, inaugurating his second term of office as President:—

PRESIDENTIAL ADDRESS.

"Once again I have the honour to address you as President of this Institute, and in so doing to review the work of the past year, and to place before you in a few words our aims for the future—and I do so with mixed feelings of pleasure and regret; of pleasure because I know that some good work has been accomplished, and of regret because so much has been left

undone. I feel that the President of an Institute such as this should have plenty of leisure to devote to the work—so much more could be accomplished if this were the case, but in spite of all obstacles much has been done, and for this the members have to thank the gentlemen of the Council and those of the various Committees who have given their valuable time ungrudgingly to further the interests of the profession, remembering, also, the heavy burden of detailing the various schemes which has been so ably borne by our devoted Secretary—but this is not enough, and unless every member does his best to co-operate and support those who are doing the principal work, this body cannot achieve the success to which it is entitled. I regret to say that members do not appear to realise their obligations in this respect, but I earnestly hope that now we have secured suitable premises for carrying on our work members will awake to the fact and will make use of our spacious rooms, meet more often, and thus strengthen the bonds of unity, which will undoubtedly be for the public welfare.

“In the course of a few weeks we shall be moving into our new quarters, and we shall then be enabled to afford students opportunities for study and research which have hitherto been impossible. This has not been accomplished without incurring heavy expense, which must fall on the shoulders of a few of the promoters unless the members will realise that all this is being done for them individually, and that the least they can do is to offer their whole-hearted support to the scheme of education for those who will live after them, and for raising the standard of the profession in Australia. I take this opportunity of thanking two generous donors for books of the total value of £100 as contributions to the library, but we need at least a further sum of £200 for furniture, and, therefore, I beg your assistance.

“Speaking of the opportunities for study which will be afforded to students, I should mention that ever since the establishment of a Chair of Architecture at the University, and, subsequently, the generous manner in which the authorities of the Technical College at this Institute’s request agreed to raise the standard of education in architecture to the level of the requirements of the Royal Institute of British Architects, the question of pupilage has become a matter of grave consideration for practising architects. My Council feels that the qualifying standard for pupilage should be matriculation, and, seeing the fine opportunities for study now afforded to students at both these seats of learning, it is for practising architects to determine whether it will not be better to reserve places in their offices for the students who have ‘learned how to learn’ from these two educational bodies, and merely require

study in office routine to fit them for the practise of their profession, or, in the alternative, to render them capable assistants.

“I now wish to refer to a matter which is the cause of great gratification, namely, that day by day the Institute is becoming more widely known, and public bodies are seeking its advice in respect to architectural undertakings; this is a most important achievement, and it behoves us to leave no stone unturned to strengthen the trust reposed in us. I am glad to say that our good friend, the Lord Mayor, has been one of the foremost to recognise that this Institute stands for betterment of architecture, and I need not add that we as an Institute feel the honour so conferred on us, and can assure His Lordship that the services of this Institute are always at the disposal of the City Council, as well as of any other public body desiring our advice and assistance in architectural matters.

“In connection with this, I desire to say that there is urgent need of a comprehensive scheme for future city improvement, and I believe that a representative Committee will shortly be formed to draft a plan for Government approval which will adequately provide for future development and for the formation of an ‘Honorary Civic Advisory Board of Experts,’ whose work it will be to insure scale and harmony in the design of future city buildings, and the prevention of damage to property owners by reason of incongruous structures being erected at the expense of adjoining properties.

“Now, with regard to registration, I am pleased to be able to say that the first Board will shortly be called together by the Minister for Education—the delay in this matter having been occasioned by the change of Government.

“A matter that I mentioned last year in my address was in connection with our journal—*Architecture*. As you are aware, we experienced considerable difficulty in arranging a settlement of liabilities extending over some time in regard to this. These have now been arranged, and ere long we hope to start a representative journal on a sound financial basis.

“Although our Annual Exhibition, which was held in April last, was attended with some measure of success, and some very fine work was exhibited, it was a matter for regret that only about forty members out of so many practising firms in the city and suburbs exhibited drawings of their work. It is the desire of my Council to make this exhibition popular amongst members, and suggestions for improvements by any of the members will be gladly welcomed.

“In conclusion, gentlemen, I once more feel it my duty to urge you not to live on the fringe of the profession. Every practising architect in this State incurs a

moral responsibility to support the central body which is upholding his status—there is no middle course, either you mean to be a good citizen and raise the standard of your profession to the highest order, or you are a 'drone,' and as such you accept the good things done for you without making any return. It is for each one to seriously ask himself the question: What am I doing for the good of the profession to which I have the honour to belong?"

Thanks to the President.—Past Presidents H. C. Kent and A. W. Anderson thanked Mr. Godsell for his address and for his successful leadership of the Institute. They contrasted the large attendances which marked the meetings of to-day with the meagre musters of the old times, when too often the Minute Book had to record that a meeting lapsed for want of a quorum. They did not pretend to understand by what art Mr. Godsell attracted men as he did, but they wished him continued prosperity, and hoped that the future might hold in store a line of popular Presidents who, each in turn, would stand for the advancement of the profession and the improved status of the Institute, as he did.

Entertainment and Social Function.—The President entertained the members and visitors as his guests for the remainder of the evening. Mr. B. J. Waterhouse (Vice-President) arranged the programme, and the following artists assisted:—Mr. Roy Basil Mackey, pianist; Mr. Chas. Smythe, basso; Mr. Mowat Carter, violinist; and Mr. Edwards, accompanist. Mr. Purdue gave several acceptable recitations.

The proceedings commenced and terminated with the National Anthem, and the loyalty of the assemblage was unquestionable, if hearty vocalism could be evidenced as proof.

Several toasts were honoured during the evening, among them being: "The President," "The Past Presidents," to which Messrs. H. C. Kent, A. W. Anderson and E. A. Scott responded; "The School of Architec-

ture," coupled with the name of Professor Wilkinson; "The Master Builders," acknowledged by Mr. J. M. Pringle; "The Quantity Surveyors," coupled with the names of W. Thompson and J. Harding; and lastly, "The Lord Mayor," to which the Right Honourable W. P. McElhone himself replied.

The Lord Mayor said that he had been greatly helped in several matters by assistance rendered by Mr. Godsell and members of the Institute Council, and he had decided to consult the Institute in all matters which came within its scope. He had been inspired by the President with the idea of a Board being established which would make it possible that all future improvements in Sydney should be carried out in accordance with a well-conceived plan. He thought that was the right way to set about the matter, and he felt sure that if the suggestion were placed before the Premier in a proper manner, not only the architectural profession but the whole of New South Wales would be indebted to Mr. Godsell. He was preparing to give incapacitated returned soldiers an opportunity to earn a living by selling newspapers in neatly designed kiosks, and so to enable them to subsist without charity. He had been assisted by the President in the design of these kiosks, as in other ways. He was glad to testify how much he appreciated the services which had been rendered, and as long as he retained the Mayoral chair he would insist upon the official recognition of the Institute, and when advice was required from outside sources, he would take care that the Institute was consulted.

The meeting came to an enthusiastic end about 11 p.m.

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
N. S. War Memorial ...	—	Approved.
Port Said Memorial ...	31/3/23	Approved

MR. JOHN YOUNG

Was born 1827, at Footscray, in Kent. Died at Sydney, February 1, 1907.

Served articles under Mr. I. Cade, C.E., London, as engineer and architect, and Messrs. Garland and Christopher; then served under Messrs. Mullan and Holland, contractors, Bloomsbury. Assistant Manager with Messrs. Sykes, contractor for Goole Dock,

Wakefield, and Goole railway work, and for the Aire and Calder Navigation Co., under Bartholmes.

Managed a contracting firm, G. May & Co., Chancery Lane, London. Draughtsman for Sir Joseph Paxton during the Exhibition of 1851 and subsequent works, including assisting in the design of Mentmore for Baron Meyer Rothschild, and now belonging to Lord Rosebery.

Built, as contractor, the church at Chislehurst, Kent, from the design of W. W. Wardell, C.E. & Arch.—then of Hampstead, but afterwards came to Australia—and in which church the remains of the late Emperor of the French, *Napoleon III.*, rested for some years, until removed to France. Also erected a church at Chichester for the Duke of Norfolk.

When he had made arrangements to come out to Australia, and he called upon Sir J. Paxton to bid him good-bye. Sir Joseph did not approve, and offered him the position of superintendent for the chateau then to be erected near Paris for Baron Lionel Rothschild, but passage being paid and everything on board, he felt compelled to decline the offer.

One of the first contracts undertaken by Mr. Young was St. Patrick's Cathedral, Melbourne, under the same Mr. Wardell, architect, who designed the church at Chislehurst and St. John's College, Sydney, in 1859. He was engaged in works at St. Patrick's Cathedral upwards of 30 years. In 1860 he undertook the erection of a Cathedral Church at Hobart, and to show the extraordinary energy and necessary ability for the carrying out of works, he also had contracts in Melbourne, Ballarat, Launceston and New Zealand simultaneously; and in 1866 entered into contract for St. Mary's Cathedral, Sydney, occupying about 20 years.

In 1870 he erected the Exhibition Building in Prince Alfred Park in six months, although there were 53 wet days, and gave a dinner to Archbishops, Judges, members of Parliament, Corporation, and others, together with about twelve hundred employees and their wives, at completion of contract.

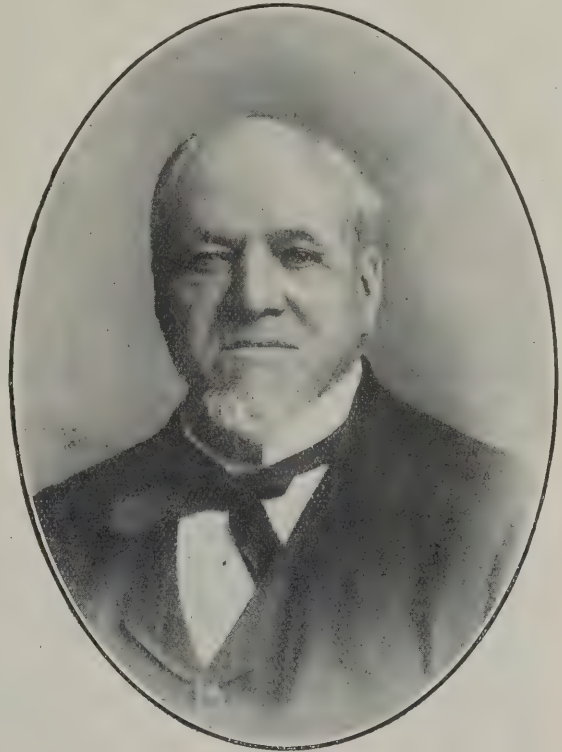
In 1867 Mr. Young took a contract for the erection of the General Post Office, Sydney, which occupied several years.

In 1871 there being a probability of a war with Russia, Sir James Martin, who was then Premier, sent for Mr. Young, and inquired of him if he could fortify the Heads—in three months. On a reply in the affirmative, Sir James instructed him to at once carry out the works, which he did.

In 1878 the Government, having decided to hold an exhibition, and as considerable delay had occurred, it was found that only eight months were left to carry on the erection of the requisite buildings. Mr. Young was sent for and undertook to carry out the work in the eight months, although at the time it was thought to be an impossible task. However, the work was completed and the exhibition opened at the appointed time.

Mr. Young has carried out numerous other works, among them being the Lands Offices, A.J.S. Bank building, sewer works and bridges.

Mr. Young was twelve years an alderman of Sydney and Mayor in 1886, during which time he introduced the concrete formation and wood blocking of the streets of Sydney, and also the tarpaving of footpaths, all of which have come into general use. When the



MR. JOHN YOUNG.

foundations of a proposed Town Hall were condemned, Mr. Young strongly advocated a more commodious Town Hall, to hold 5,000, in lieu of the 1,500 proposed. He showed by a plan how it could be done on the ground in the possession of the Corporation, and although there was great opposition, he obtained a Committee of the Council; and the whole of the evidence, as well as the newspapers, supported his contention, and the present Centennial Hall in the Town Hall buildings is the result.

Mr. Young, when leaving England, evidently anticipating colonial conditions, brought out a constructed dwelling, which was one of the first houses erected at North Melbourne, over 60 years ago; which, we understand, is still standing.

COMMONWEALTH OF AUSTRALIA.

COMPETITION FOR DESIGNS FOR A MONUMENT TO BE ERECTED AT PORT SAID, EGYPT

Department of Defence,
Melbourne, 6th June, 1922.

The Department of Defence, acting for the Commonwealth Government and the representatives of the Australian and New Zealand Forces that served in Egypt, Palestine and Syria during the late war, invites designs from sculptors, architects and others of British nationality permanently resident in Australia or New Zealand, and from Australian and New Zealand sculptors and architects beyond the seas, for a monument to be erected at Port Said to the soldiers of the Australian and New Zealand Forces who laid down their lives in Egypt, Palestine and Syria, 1916-1918.

A statue or group of statuary in marble or bronze will form the main feature of the monument, and the

design must embrace in its composition sculpture typifying both Australian and New Zealand horsemen. Otherwise the character of the monument will be left to the designer.

Premiums of 250 guineas, 100 guineas and 50 guineas will be paid for the designs judged to be first, second and third respectively in order of merit.

Designs will be received by the Secretary, Department of Defence, Melbourne, up to 12 noon on 31st March, 1923.

Full particulars of conditions governing this competition are available upon application to the Secretary, Department of Defence, Melbourne.

T. TRUMBLE,
Secretary.

MONUMENT TO THE SOLDIERS OF THE AUSTRALIAN AND NEW ZEALAND FORCES

*Who laid down their lives in Egypt, Palestine and
Syria, 1916-1918.*

PORT SAID, EGYPT.

CONDITIONS TO REGULATE SUBMISSION OF COMPETITIVE DESIGNS.

1. The Department of Defence, acting for the Commonwealth Government and the representatives of the Australian and New Zealand Forces that served in Egypt and Palestine during the late war, invites designs from sculptors, architects and others of British nationality permanently resident in Australia and New Zealand, and from Australian and New Zealand sculptors and architects beyond the seas, for a monument to the soldiers of the Australian and New Zealand Forces who laid down their lives in Egypt, Palestine and Syria, 1916-1918. The monument is to be erected at Port Said, Egypt.

A statue or group of statuary in marble or bronze will form the main feature of the monument. The design must embrace in its composition sculpture typifying both Australian and New Zealand horsemen, otherwise the character of the monument will be left to the designer.

2. The Department of Defence has appointed Major-General Sir J. Talbot Hobbs, K.C.B., K.C.M.G., V.D.

(architect), Perth, Western Australia; G. V. F. Mann, Esq., Director of the National Art Gallery, Sydney, New South Wales; and George Sydney Jones, Esq., A.R.I.B.A. (architect), Sydney, New South Wales, to act as assessors.

They will examine all the designs submitted, determine whether they conform to these conditions, and exclude any which do not. They will report to the Commonwealth Government on the designs not so excluded, and award the premiums in strict accordance with these conditions.

3. The award of the assessors shall be final and binding on the Commonwealth Government and representatives of the Australian and New Zealand Forces above mentioned, and on the competitors.

4. No design or model shall bear any motto, device or distinguishing mark, but all the designs shall be received, and these and the sealed envelope referred to in Clause 5 will be immediately numbered by the Secretary, Department of Defence.

5. Each design or model shall be accompanied by a sealed opaque envelope containing the name and address of the author, together with the signed declaration (see Clause 6), and such envelope shall be securely attached to the design or model.

6. Each design or model shall be accomplished by a declaration signed by the competitor or joint competitors, stating that the design or model is his or their own personal work, and that the drawings or models have been prepared under his or their own supervision. The Successful competitor must be prepared to satisfy the assessors that he is the *bonâ fide* author of the design or model submitted.

7. A design shall be excluded from the competition—

- (a) If received after the stipulated date (accidents in transit excepted).
- (b) If it does not substantially conform to the conditions.

ment just inside the gardens off the road, as indicated on the plan, in order that it may be clearly visible to passengers passing through the Canal.

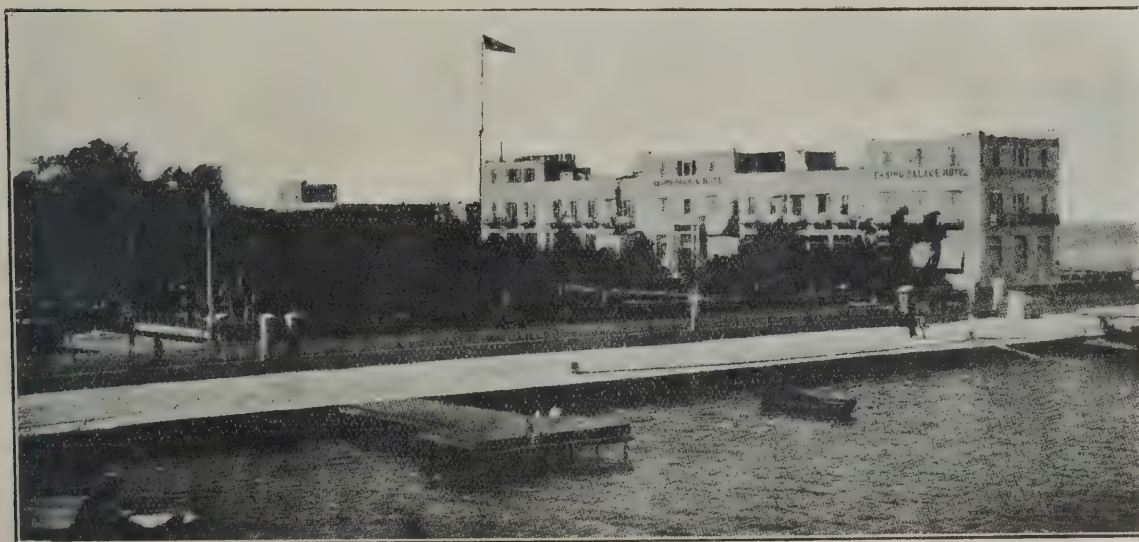
9. *Materials*.—Granite or an approved hardstone should be used for the pedestal, base, steps, etc., and marble or statuary bronze for the sculpture.

The Commonwealth Government will take delivery of the material for the monument, which must be packed and crated, at any Australian or other port at which ships trading with Port Said call.

The Commonwealth Government will undertake the erection of the monument on the site.

10. *Cost*.—The expenditure on the monument shall be limited to £11,000, of which £7,500 is to be allocated to sculpture (see Clause 15, Sub-clause (b)), and £3,500 is to be allocated to the pedestal, base and steps, delivered ready for shipment.

11. Premiums of two hundred and fifty guineas, one



View of Site from Centre of Suez Canal.

- (c) If the design is solely or in part a reproduction.
- (d) If any of these conditions are violated.
- (e) If it exceeds the limit of site as shown on the plan issued herewith.
- (f) If a competitor shall disclose his identity or attempt to influence the decision.

8. *The Site*.—A plan and photographs of the proposed site, also a sketch of the garden, buildings and quayside of the canal, are illustrated herewith. *Note*.—Figured dimensions on plan are given in metres.

The site of the proposed monument is in the public gardens immediately in rear of the Casino Palace Hotel at Port Said, facing the quay near the entrance to the Suez Canal. It is proposed to erect the monu-

ment hundred guineas, and fifty guineas shall be paid respectively for the designs placed first, second and third in order of merit. The design placed first shall become the property of the Commonwealth Government.

12. The premiums shall be paid in accordance with the assessors' award, and unless the assessors shall be satisfied that there is some valid objection thereto, the author of the design placed first shall be employed to carry out the work of the monument. If the author resides in a country other than Australia, he may arrange, subject to the approval of the assessors and the Commonwealth Government, for a competent deputy to act on his behalf and at his cost.

13. The designer entrusted with the carrying out of the work previous to erection, if an architect, shall be

paid according to the scale of charges of the Royal Institute of British Architects, *i.e.* six per cent. (6%) on the cost of the architectural portion of the monument up to the time it leaves Australia, for all drawings, details, supervision, and other work as determined by the assessors to be necessary. If a sculptor, he shall be paid the sum of £7,500 on terms and conditions referred to in Sub-clause (b) of Clause 15.

It is to be distinctly understood that the cost of freight and erection shall not be included in the amount on which commission shall be paid to the designer.

Should the author of the design placed first be a sculptor, it will be necessary for him to collaborate with an architect, to be approved by the assessors; who shall design the base and entourage of the monument, for which the architect will receive 6 per cent. commission on the cost thereof, and the sculptor shall be paid the sum of £7,500 in accordance with the terms

14. If instructions to proceed are not given to the author of the design placed first by the assessors within six months from the date of the award, then he shall receive payment for his services in connection with the preparation of the competition drawings or models of a sum equal to $1\frac{1}{4}$ per cent. of the amount of the estimated cost of the monument when finished and ready for shipment. (See Clause 13 *re* cost.)

If the said author be subsequently employed, the $1\frac{1}{4}$ per cent. previously paid to him shall merge in his ultimate commission. The premium shall not form a portion of the commission.

15 (a). *Architectural Work*.—The architectural drawings for each design shall be shown on sheets of paper, double elephant size, and shall comprise a ground plan, two elevations (if square on base, one elevation will suffice), and one section, all drawn to a scale of 2 feet to 1 inch, and a detail of a small part



View of Site from Centre of Suez Canal.

and conditions referred to in Sub-clause (b) of Clause 15 for all drawings, details, supervision and other work as may be determined by the assessors to be necessary up to the time the monument leaves Australia or the port from which it will be shipped.

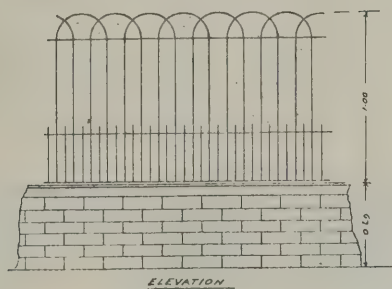
Should the author of the design placed first be an architect, it will be necessary for him to collaborate with a sculptor, to be approved by the assessors, who shall be employed by the Commonwealth Government to execute the sculpture, for which the sculptor shall be paid the sum of £7,500 in accordance with the terms and conditions referred to in Sub-clause (b) of Clause 15 for all drawings, details, supervision and other work as may be determined by the assessors to be necessary up to the time the monument leaves Australia or the port from which it will be shipped.

of the design to be drawn quarter full size, and also a block plan of the site with the monument to a scale of 10 feet to 1 inch. All drawings must be in black ink on white paper, unwashed and uncoloured; the sectional portion on plans and section must be blocked in. All drawings submitted are to be in line only.

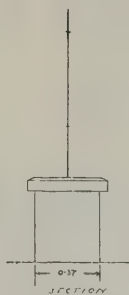
A perspective view drawn from a plan 2 feet to 1 inch will be admitted at the option of the competitor. If supplied it must be in black ink, and either hatched or washed in similar ink. Competitors may also illustrate a special feature by a model not less than 2 feet high instead of a detail drawing.

15. (b). *Superstructure—Sculpture*.—

Approximate Cost.—The superstructure or sculptural section must not exceed in cost the sum of £7,500 finished complete ready for setting upon base.



ELEVATION



SECTION

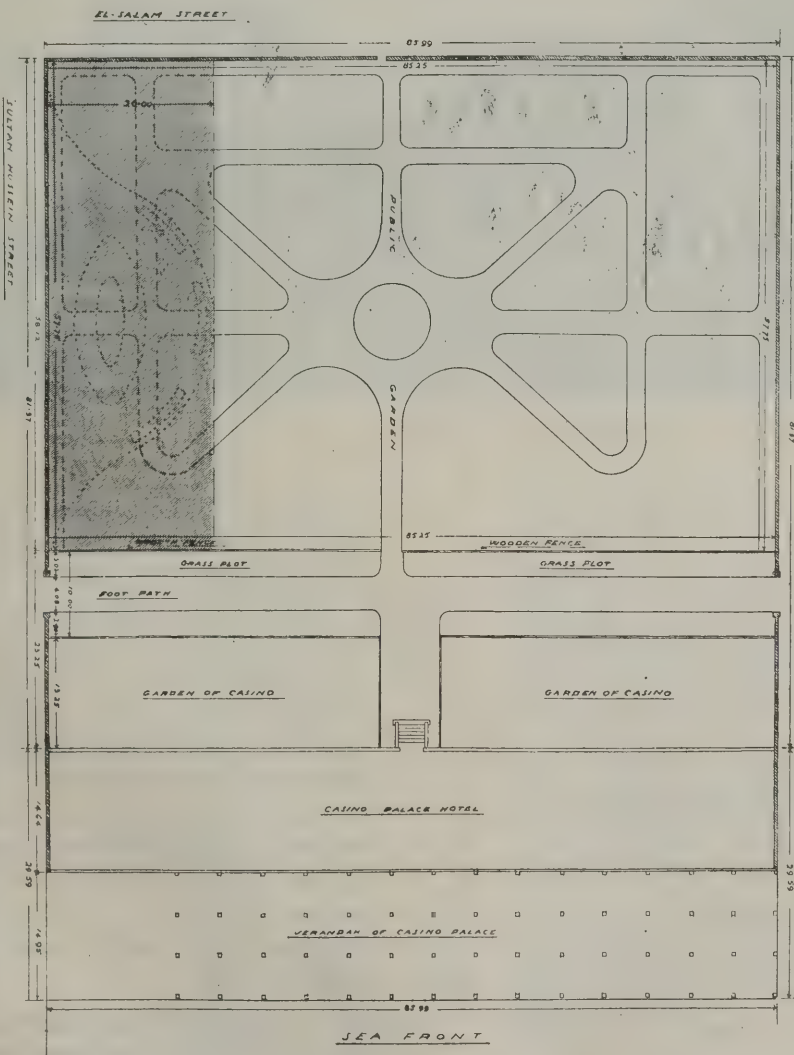
Scale $\frac{1}{20}$

PORTON STATED REWARDED BY
THE AUSTRALIAN WAR GRAVES COMMISSION
FOR THEIR WAR MATERIAL

PLAN SHOWING PUBLIC GARDEN SOUTH OF CASINO

777601 W 3 N 2 E

MAMOUN STREET



CANAL SEEL

Australian Memorial Site
Port Said - Egypt

Teredos pseudopalustris not seen by Edwards's before Australia 1902-1903.
Lewer's 22/9/02.

The sculptor must submit a typed statement setting out the estimated cost of the full-sized design in plaster, with duplicate, and also the estimated cost of casting in bronze or other material selected from a recognised foundry. The sculptor must also state the time anticipated for the delivery of the completed work.

Delivery.—If executed beyond Australia the cost should include duplicate plaster full-sized cast and

Payments.—Payments to the sculptor shall be as follows:—

One-third of the amount of contract upon commencement of the work, one-third on the completion of the full-sized model of the work, provided always that where the work includes more than one piece of sculpture, one-third only of the proportion of cost of each piece shall be paid on the completion



View of Site from S.E. Corner.

packing, and must be delivered ready for shipment. If executed in Australia, see general conditions.

Subject.—Intending competitors should note Clause 1, General Conditions, which states that the design "must embrace in its composition sculpture typifying both Australian and New Zealand horsemen, otherwise the character of the design will be left to the designer."

Advice to Sculptors.—Sculptors are advised to complete their preliminary design in collaboration with a competent architect who would be eligible to complete the monument conjointly if commissioned to do so.

Material.—The material used in the sculptural portion will be preferentially bronze. If marble is introduced, Australian marble will not be permissible. Specimens of both bronze and marble will be subjected to analysis.

Models.—Sculptors will submit a model in plaster of not less than 2 feet in height, including base.

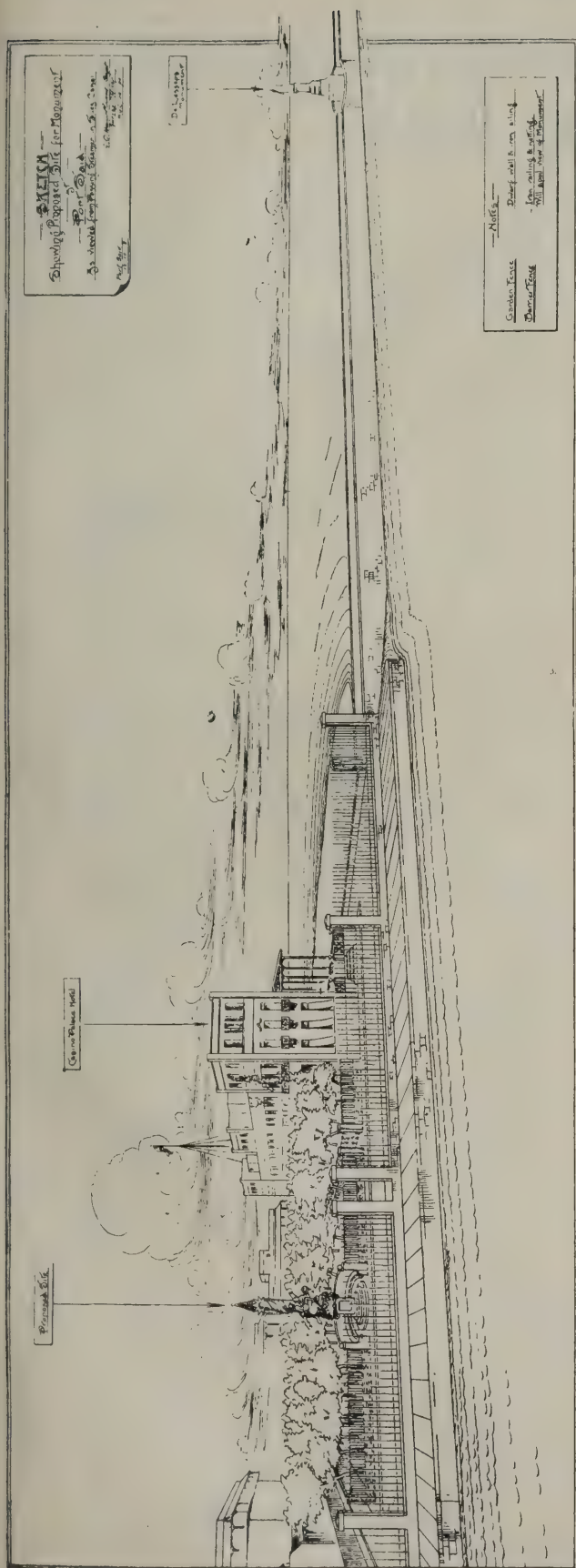
of the full-sized model thereof—balance upon the satisfactory completion of the work and the delivery of same as previously stated.

16. The following costs and expenses shall be paid or borne by the Commonwealth Government:—

- (a) All extra costs and expenses arising from or incidental to any change in the approved design or in the full-sized model being made at the request of the assessors.
- (b) All premiums payable under any policy of insurance which must be taken out on the life of the sculptor pending the completion of any work.

17. The following costs and expenses shall be borne by the sculptor:—

- (a) All cost of providing material of which the piece of sculpture or other work is made, and of drawing designs or making necessary models thereof.



(b) All cost of repairing or making good all breakage of or damage to work which may occur during construction.

(c) The cost of packing and delivering the work to place of shipment.

All working sketches and working models remain the property of the sculptor after completion of the work.

18. A description of materials and any information necessary for elucidating the design shall be written on the drawings, and the author's estimate of cost shall be clearly stated thereon, except in the case of models, when a typed description would be submitted.

The drawings must be mounted on strawboard or other suitable mounts.

19. Designs must be delivered, free of all charges, to the Secretary, Department of Defence, Melbourne, Victoria, Australia, on or before 12 noon on Saturday, 31st March, 1923.

20. *Custody.*—The Commonwealth Government does not accept responsibility as regards safe transit, custody, or retransit of the designs, models, or documents forwarded or delivered by a competitor, but it undertakes that all reasonable care shall be exercised to prevent damage during the period in which they are in its possession.

21. *Publicity.*—All designs, models, and documents not excluded from the competition may be exhibited for a reasonable period after adjudication, such exhibition to be open free to the public.

Publication of designs, whether premiated or unpremiated, will in no way entitle competitors to any claim for compensation against the Government or its agents in regard to proprietary or other rights.

22. *Return.*—The design placed first shall become the property of the Commonwealth Government. All other designs will be repacked and shipped or posted for return to the several competitors.

Each competitor will be advised of their despatch.

Freight and other charges in transit will be paid by the Commonwealth Government to the address so named by the Competitor.

23. Any question arising out of these conditions may be addressed in writing to the Secretary, Department of Defence, Melbourne, Victoria, Australia, on or before 14th October, 1922.

Such replies as the assessors may deem necessary will be forwarded to all competitors and form part of these conditions.

T. TRUMBLE,

Secretary, Department of Defence,

Melbourne, 1st June, 1922.

MEMBERS OF THE INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

1st JULY. 1922

Life Fellow.

Jones, G. Sydney, A.R.I.B.A., 113 Pitt Street, Sydney.

Fellows (F.I.A.)

*Adam, J. S., Mutual Life Buildings, Wynyard Street, Sydney.

Allen, Alfred,

Alsop, Rodney H., F.R.I.B.A., 352 Collins Street, Melbourne, Victoria.

Anderson, A. W., 7 Bridge Street, Sydney.

Barr, John, Gordon Road, Lindfield.

Barlow, Jno., Bishop's Avenue, Randwick.

Blair, G. MacLeish, Govt. Architect's Branch, Dept of Public Works, Sydney.

Brodrick, R. H., Town Hall, Sydney.

Buchanan, S. H., 26 Hunter Street, Sydney.

Campbell, J., 18 Enmore Road, Newtown.

Campbell, James Ernest, 42 Alt Street, Ashfield.

Craig, R. G., Sandridge Street, Bondi.

Chambers, C. W., Holt's Chambers, 121 Pitt Street, Sydney.

Clamp, J. Burcham, 122 Pitt Street, Sydney.

Copeman, J. J., 72b King Street, Sydney.

Cosh, Thomas Frame, 16 Spring Street, Sydney.

Day, H. C., 3 Spring Street, Sydney.

Denning, Geo., 20 Bridge Street, Sydney.

De Putron, Wm., 17 Martin Place, Sydney.

Dunstan, Jno., 61 Market Street, Sydney.

Durrell, G. W., 14 Castlereagh Street, Sydney.

Esplin, D., 85 Pitt Street, Sydney.

Fairfax, C. E., Bown's Road, Kogarah.

Foggitt, W. H., c/o Housing Board, Grosvenor Street, Sydney.

Ford, B. W., Chamber of Commerce Buildings, George and Grosvenor Streets. 'Phone 409.

Gardiner-Garden, H. McB., Govt. Architects' Branch, Dept. of Public Works, Sydney.

Gilling, F. Glynn, Twyford House, 17 Castlereagh Street.

Godsell, G. H., 14 Martin Place, Sydney.

Grant, G. L., 14 Castlereagh Street, Sydney.

Hadley, B., Lecturer-in-Charge, Dept. of Architecture, Technical College, Harris Street, Ultimo.

Halligan, M. B., Equitable Building, George Street, Sydney.

Hennessy, John F., 247 George Street, Sydney.

Hennessy, Jack F., B.Sc.A., 247 George Street, Sydney.

*Hodges, H. T., 60 Rangers Road, Neutral Bay.

Hodgson, T. W., 28 Martin Place, Sydney.

Hunt, Walter, Townsville, Queensland.

Jackson, H. O., Sydney Harbour Trust.

Joseland, H., Twyford House, 17 Castlereagh Street, Sydney.

Justelius, J. E., 49 Castlereagh Street, Sydney.

Kent, H. C., F.R.I.B.A., 58 Pitt Street, Sydney.

Kenwood, W., Post Office Chambers, Pitt Street, Sydney.

Kethel, J. A., 58 Pitt Street, Sydney.

Lake, J. W. H., 2 Hunter Street, Sydney.

Lamrock, W., Council Chambers, Drummoyne.

Lindsay-Thompson, E., Sydney Arcade, King Street, Sydney.

Lodge, Edwin Harry Ernest, 357 Elizabeth Street, Sydney.

Louat, Rutledge, 375 George Street, Sydney.

Macqueen, A., 8 Spring Street, Sydney.

Marks, T. J., 14 Martin Place, Sydney.

McCredie, A. L., 7 Bridge Street, Sydney.

McCarthy, J. T., Challis House, Martin Place, Sydney.

McDonald, Allan, Temora.

McRae, Geo., Government Architect's Office, Phillip Street, City.

Merriman, J. H., Town Hall, Sydney.

Minnett, R. V., 12 Loftus Street, Sydney.

Monks, William John, Wagga Wagga.

Moorhouse, F., 105 Pitt Street, Sydney.

Morris, Howell Price, Lett Street, Lithgow.

Morrow, D. T., 17 Martin Place, Sydney.

Mould, S. M., A.R.I.B.A., 85 Pitt Street, Sydney.

Nangle, J., F.R.A.S., Superintendent Technical College, Sydney.

Newman, W., 3 Spring Street, Sydney.

Newton, J., 4 Gouldsbury Street, Mosman.

Nixon, W. M., 163 Pitt Street, Sydney.

Oakeshott, G. J., Commonwealth Dept. Works & Railways, Customs House, Sydney.

O'Connor, J. F., Inverell.

Parkes, Varney, 1 Castlereagh Street, Sydney.

*Peddle, Jas., 8 Spring Street, Sydney.

Pender, Walter Harold, 18 Elgin Street, West Maitland.

Pickering, R. W., Union House, George Street, Sydney.

Power, Joseph Porter, B.N.Z. Chambers, Wynyard Street, Sydney.

Purdue, Archibald John, Govt. Architect's Branch, Dept. of Public Works, Sydney.

The asterisk (*) denotes a Licentiate R.I.B.A.

- Ramsay, L. L., 113 Pitt Street, Sydney.
 Ranclaud, P. E., 15 Castlereagh Street, Sydney.
 Reeves, Dawson, 6 Boyle Street, Mosman.
 Reid, John, 350 George Street, Sydney.
 Roberts, George A., 76 Pitt Street, Sydney.
 Rosenthal, Sir Charles, F.R.I.B.A., K.C.B., C.M.G., 8a Castlereagh Street.
 Ross, H. E., Equitable Building, 350 George Street, Sydney.
 Rostron, W. A., Somerset House, 9 Martin Place, Sydney.
 Rowlinson, E. O. M., Boyce Road, South Randwick.
 Rowe, H. Ruskin, Equitable Buildings, 350 George Street, Sydney.
 Sampson, T. P., Pendennis Chambers, 375 George Street, Sydney.
 Saunders, A. R., c/o Ross & Rowe, 350 George Street, Sydney.
 Scott, E. A., 115 Pitt Street, Sydney.
 Shaw, Reginald Albert, 9 Martin Place.
 Silk, T. W., West Maitland.
 Smith, F. T., 88 Pitt Street, Sydney.
 Somerville, A. F. T., 273 George Street, Sydney.
 Spain, Alfred, F.R.I.B.A., 16 Spring Street, Sydney.
 Steer, Victor G., 68½ Pitt Street, Sydney.
 Stocker, H., "The Bungalow," Old South Head Road, Bondi.
 Thorp, S. G., Atlas Building, 8 Spring Street, Sydney.
 Vernon, H. Venables, 38 Martin Place, Sydney.
 Vicars, Jas., Challis House, Martin Place, Sydney.
 Wagstaff, Harry James, 491 Bourke Street, Melbourne.
 Warden, Sidney, 8a Castlereagh Street, Sydney.
 Wardell, H. E., 20 Bridge Street, Sydney.
 Waterhouse, B. J., 2 Hunter Street, Sydney.
 Wells, R. M. S., Dept. Public Instruction, Sydney.
 White, H. E., Equitable Building, George Street, Sydney.
 Wilshire, H. A., 3 Spring Street, Sydney.
 Wilkinson, Prof. Leslie, F.R.I.B.A., School of Architecture, Sydney University.
 Winn, Frederick, 2 Hunter Street, Sydney.
 Wright, Arthur Henry, 79 Pitt Street, Sydney.
- Associates (A.I.A.).*
 Allen, Frederick George Leslie, 4 Castlereagh Street, Sydney.
 Allan, W. W., 23 Moore Park Road, Paddington.
 Aley, Augustus, 54 P.O. Chambers, Sydney.
 Backhouse, O., c/o Architects' Branch, Dept. of Education, Sydney.
 Barry, William George, 170 Ben Boyd Road, Neutral Bay.
 Baxter, Gerald Preston, Dept. of Public Works, West Kempsey.
 Bayley, Arthur L., 92 Wardell Road, Dulwich Hill, Sydney.
 Bloomfield, Frank, l'Anson, A.R.I.B.A., 4 Undercliff Street, Neutral Bay.
 Beattie, Oscar Alexander, A.R.I.B.A., Tryon Road, Lindfield.
 Beckley, Percy G., 97 Flood Street, Leichhardt, Sydney.
 Board, F. J., Lismore.
 Bohringer, Charles, Earle Street, Roseville.
 Bretnall, Eric Charles, Dardanella, Bowral.
 Buckle, F., 107 Pitt Street, Sydney.
 Budden, H. E., E.S. & A. Bank Chambers, George and King Sts., Sydney.
 Cambridge, Ernest Robert, Railway Construction Branch, Public Works Dept., Sydney.
 Carfrae, Alec Swinton, 113 Pitt Street, Sydney.
 Chapman Victor Charles, "Dinorwie," Margaret Street, Woolwich.
 Chiun, Frederick Henry, 23 Hankey Street, Wellington, New Zealand.
 Cizzio, V. D., c/o S. Warden, 8a Castlereagh Street, Sydney.
 Clark, A. Lanyon, 81 Elizabeth Street, Sydney.
 Clatworthy, Frank, c/o Manson & Pickering, Union House, George Street, Sydney.
 Collins, Roscoe J., 12 Castlereagh Street, Sydney.
 Colman, Arthur Ernest, District Works Office, Wollongong.
 Cook, G. S., Dept. Works and Railways, 151 Collins Street, Melbourne.
 Copeland, Cecil R., Works and Railways Dept., Customs House, Sydney.
 Crane, Arnold N., Daily Telegraph Buildings, King Street, Sydney.
 Crust, John, Dept. of Works & Railways, Customs House, Sydney.
 Dalziel, John George, 22 Queen Street, Mosman.
 Darling, T. J., 8 Spring Street, Sydney.
 Dawson, Joshua, 152 West Street, N. Sydney.
 Deeble, John Nation, Byng Street, Orange.
 Donoghue, Jack Patrick, C/o. Hennessy & Hennessy, 247 George Street, Sydney.
 Douglas-Smith, Arthur, 8 Winchcombe Avenue, Haberfield.
 Duckworth, Bertram C., "Pipitea," Prince Edward Street, Long Bay.
 England Wilbert Osbourne, 64 Pitt St., Sydney.
 Fair, A. C., 6 Canberra Flats, Murdoch Street, Cremorne.
 Fowell, Joseph Charles, A.R.I.B.A., 243 Benelong Street, Cremorne Junction.
 Gates, Herbert John, "Carthona," Murdoch Street, Cremorne.
 Gerard, Allen W., School of Architecture, Sydney University.
 Gill, W., Casino.

- Glancey, Clement, 2b Castlereagh Street, Sydney.
- Graham, Hedley Vicars, 35 Pitt Street, Sydney.
- Gray, G. B., 375 George Street, Sydney.
- Green, E. R., A.R.I.B.A., 115 Pitt Street, Sydney.
- Greenwell, C., B.Sc.A., A.R.I.B.A., E.S. & A. Bank Chambers, George and King Streets, Sydney.
- *Grove, H., Govt. Architect's Office, Phillip Street, Sydney.
- Hamilton, Claude, Daily Telegraph Building, King Street, Sydney.
- Harris, R. Keith, A.R.I.B.A., 72b King Street, Sydney.
- Harrison, George Leslie Blair, 66 Shadforth Street, Mosman.
- Hardwick, H., Mudgee.
- Henderson, Edwin Herbert, Dept. of Works and Railways, Customs House, Sydney.
- Herbert, Leonard Frederick, 210 London Bank Chambers, Martin Place, Sydney.
- Hoare, J. N., Messrs. Weston & Hoare, 14 Martin Place, City.
- Hodgson, Allan Mathew, Bull's Chambers, 28 Martin Place, Sydney.
- Holmes, H. E., c/o. Metropolitan Board of Water Supply & Sewerage, Pitt Street, Sydney.
- Hurd, Samuel J., 55 Pitt Street, Redfern.
- Hughes, Gilbert Noel, c/o. Commercial Banking Co. of Sydney, 18 Birchin Lane, E.C. London.
- Ironside, William Thomas Raymond, "Eatonia," Stirling Street, Redfern.
- Innes-Kerr, William, B.M.A. Chambers, 32 Elizabeth Street, Sydney.
- Jeffs, C. E., Wagga Wagga.
- Jones, Norman Llewellyn, Agricultural Dept., Mines Museum, George Street N., Sydney.
- Jorgensen, James Henry, 48 Ben Boyd Road, Neutral Bay.
- Keesing, G. S., A.R.I.B.A., 375 George Street, Sydney.
- Kenworthy, George Newton, Tryon Road, Lindfield.
- Kerr, James Aubrey, A.R.I.B.A., Morton Street, Wollstonecraft, Sydney.
- King, A. S., 200 Birrell Street, Waverley.
- Leggatt, Frank Redmayne, Bellevue Street, North Sydney.
- Lockley, H., "Maberry," Highlands Avenue, Gordon.
- MacIntosh, Harry Brewster, East Market Street, Richmond.
- Mackellar, Crawford Hutcheson, 122 Pitt Street, Sydney.
- Maclean, Harold Alfred, Wollondale, Turramurra.
- Manfred, Herbert Charles, Belmore Square, Goulburn.
- Mandelson, Maurice Roy, Parsley Road, Vacluse, Sydney.
- Martin, A. H., "Silverdene," Victoria Street, Roseville.
- Massie, H. H., Messrs. Kent & Massie, 58 Pitt Street, Sydney.
- Mathers, Robert Melrose, 63 Awaba Street, Mosman.
- Mathers, William Melrose, Lennox Street, Mosman.
- Mathison, G. H., "Runnimeade," Grosvenor Street, Croydon.
- McBurney, Harold N., 15 O'Connell Street, Sydney.
- McCredie, L. C., "The Lum," Rydale Road, off Fourth Avenue, Eastwood.
- McCredie, L. G. H., C/o. J. & H. G. Kirkpatrick, Findon House, Flinders Lane, Melbourne.
- Mead, Harold Roderick, 92B Pitt Street, Sydney.
- Mills, J. C. R., 38 Martin Place, Sydney.
- Money, Percy John, Works Director, Port Darwin.
- Moore, John D., A.R.I.B.A., 72b King Street, City.
- Morrow, John Donald, Fitzmaurice Street, Wagga Wagga.
- Moyes, William Shepherd, Architects' Branch, Dept. of Public Works, Sydney.
- Neave, S. A., A.R.I.B.A., 247 George Street, Sydney.
- Noone, John Murray, Architects' Branch, Dept. of Public Works, Sydney.
- Nurzey, N., Technical College, Sydney.
- Osborne, Alfred James, Renwick Street, Drum-moyne.
- Owen, P. T., Commonwealth Works Dept., Melbourne.
- Oxenham, S. S., Council Chambers, Bowraville.
- Parker, H. E., 52 Musgrave Street, Mosman.
- Peplow, David, 3rd Avenue, Campsie.
- Peploe, F. W., c/o. Hennessy & Hennessy, 247 George Street, Sydney.
- Pitt, Eric Clarke, 92b Pitt Street, Sydney.
- Prevost, R. A. de T., 17 Castlereagh Street, Sydney.
- Roarty, S., A.R.I.B.A., Daily Telegraph Buildings, King Street, Sydney.
- Robertson, Struan, Wyvern, Priory Road, North Sydney.
- Rutledge, Ralph Gordon, Daily Telegraph Building, King Street, Sydney.
- Ruwald, Cyril C., A.R.I.B.A., Palmer Street, Chatswood.
- Ryan, F. P., 661 Dowling Street, Moore Park, Sydney.
- Scott, Elwin Harry, Daily Telegraph Building, King Street, Sydney.
- Scott, T. M., c/o. E. A. Scott and Green, 115 Pitt Street, Sydney.
- Seaton, Stanley Alfred, c/o. Messrs. Robertson & Marks, 14 Martin Place, Sydney.

Seale, Joseph Richard, Mason Avenue, Cheltenham.
 Shaw, R. A., c/o W. J. Monks, F.I.A., Wagga Wagga.
 Shiels, N. Villar, 4 Castlereagh Street, Sydney.
 Smith, C. H. Strachan, c/o. Post Office, Tweed Heads.
 Spark, Charles Henry, R.S.S. Branch, Warwick Building, Hamilton Street, Sydney.
 *Sparke, A., Wahroonga.
 Soden, Leslie John, Barker Road, Strathfield.
 Stafford, Alan Edgecliff, 53 Pine Street, Randwick.
 Stansfeld, J. S., Pendennis Chambers, George Street, Sydney.
 St. Julien, C. W., 207 Bondi Road, Bondi.
 *Sykes, Joseph, 76 Bridport Street, Albert Park, Melbourne, Vic.
 Taylor, Florence Mary (Mrs.), 20 Loftus Street, Sydney.
 Thorne, W. T., Albury.
 Tingle, E., Watt Street, Newcastle.
 Todd, C. H. Uttley, Dept. of Works and Railways, Selbourne Chambers, Pirie Street, Adelaide, S.A.
 Traill, S. John, Warrawee, Sydney.
 Tojkander, Bengt (Member of Architects' Association of Finland), c/o Messrs. Robertson & Marks, 14 Martin Place, Sydney.
 Walford, Dudley Vivian, Commerce Building, Ash Street, Sydney.
 Walker, Charles Mack, 114 Hunter Street, Sydney.
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 Ward, Peter, Newington Road, Stanmore.
 Waterston, H. C., 17 Castlereagh Street, Sydney.
 White, H. C., Singleton.
 Withers, W. H., Campsie.
 Wilton, F. H. B., Equitable Building, George Street, Sydney.

Wilshire, Esmond B., Yaralla Chambers, 109 Pitt Street, City.
 Winter, C. R., A.R.I.B.A., c/o Messrs. Robertson & Marks, Martin Place, Sydney.
 Wood, O. P., A.R.I.B.A., Daily Telegraph Building, Sydney.
 Woodforde, Marcus Victor Ernest, Canberra, Federal Territory.
 Wright, George, "Clifton," Kenneth Street, Longueville.
 Young-Wai, Samuel, 12 Dover Street, Summer Hill.

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Blacket, Cyril, Tasman Park, St. George's Basin.
 Carter, Norman, Vickery's Chambers, Pitt Street, Sydney.
 Cohen, Judge, Judges' Chambers, District Court, Queen's Square.
 Davey, J. J., "Bransburton," Day Street, Marrickville.
 Ifould, Wm. H., Principal Librarian, Public Library, Sydney.
 Lister-Lister, W., 76 Pitt Street, Sydney.
 Lysaght, Herbert Royse, 8 Spring Street, Sydney.
 Mann, G. V. F., Director of the National Art Gallery.
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 Sulman, John, F.R.I.B.A., Warrung Street, McMahon's Point.
 Walker, Frank, Chatswood.
 Warren, Professor W. H., Sydney University.
 Watson, Capt. James H., 3 West Street, North Sydney.

Students

Beaver, Harold C., "St. Aidans," Darling Street, Chatswood.
 Smith, W. M. "Handsworth," Princess Street, Canterbury.

The asterisk (*) denotes a Licentiate R.I.B.A.

John J. Lough, Official Secretary, 5 Elizabeth Street, Sydney. Tel.; B 4915.

INSTITUTE OF ARCHITECTS OF N.S.W.

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Ex-President:

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Vice-President:

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Mr. F. GLYNN GILLING, F.I.A., 17 Castlereagh-street. B 5304.

Mr. S. M. MOULD, F.I.A., A.R.I.B.A., 85 Pitt-street. City 7685.

Mr. H. V. VERNON, F.I.A., 38 Martin-place. B 3614.

PROFESSOR LESLIE WILKINSON, F.I.A., F.R.I.B.A., School of Architecture, University. City 9587.

Mr. R. KEITH HARRIS, A.I.A., A.R.I.B.A., 72b King Street. City 619.

Mr. L. C. MCCREDIE, A.I.A., c/o Messrs. Robertson and Marks, 14 Martin-place. City 9970.

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Each Committee has power to add to its number. Exercise of the power to be reported to Council. Each Committee is to hold office for twelve months, or until its successor has been appointed.

Vide resolution at Council Meeting, 18/3/21.

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Mr. J. Peddle, F.I.A., 8 Spring-street.

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Mr. J. A. Kerr, A.I.A., 4 Bridge Street (Hon. Secretary).

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Mr. J. Barr, F.I.A., Gordon-road, Lindfield.

Mr. N. Carter, 76 Pitt-street.

Mr. R. Keith Harris, A.I.A., A.R.I.B.A., 72b King-street.

Mr. G. Sydney Jones, F.I.A., A.R.I.B.A., 113 Pitt-street.

Mr. L. C. McCredie, A.I.A., "The Lum," Rydale-road, off Fourth-avenue, Eastwood.

Mr. F. Glynn Gilling, F.I.A., 17 Castlereagh-street

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Mr. B. Hadley, F.I.A., Lecturer-in-charge, Department of Architecture, Technical College, Harris-street, Sydney.

Mr. Jack F. Hennessy, F.I.A., B.Sc.A., 247 George-street.

Mr. S. M. Mould, F.I.A., A.R.I.B.A., 85 Pitt-street.

Mr. A. F. T. Somerville, F.I.A., 273 George-street.

Mr. B. J. Waterhouse, F.I.A., 2 Hunter-street.

Professor L. Wilkinson, F.I.A., F.R.I.B.A., School of Architecture, Sydney University.

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 Mr. S. M. Mould, F.I.A., A.R.I.B.A., 85 Pitt-street.
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 Mr. L. C. McCredie, A.I.A., c/o. Messrs. Robertson & Marks, 14 Martin Place.

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 Mr. J. D. Moore, A.I.A., A.R.I.B.A., 72b King-street.
 Professor L. Wilkinson, F.I.A., F.R.I.B.A., School of Architecture, Sydney University.
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 Mr. Norman Carter, 76 Pitt-street.
 Mr. W. H. Ifould, Principal Librarian, Public Library, Sydney.
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- Mr. F. Glynn Gilling, F.I.A., 17 Castlereagh-street.
 Mr. E. R. Green, A.I.A., A.R.I.B.A., 115 Pitt-street.
 Mr. L. C. McCredie, A.I.A., "The Lum," Rydale-road, off Fourth-avenue, Eastwood.
 Mr. J. D. Moore, A.I.A., A.R.I.B.A., 72b King-street.
 Mr. S. M. Mould, F.I.A., A.R.I.B.A., 85 Pitt Street.
 Professor L. Wilkinson, F.I.A., F.R.I.B.A., School of Architecture, Sydney University.

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 Mr. H. C. Kent, F.I.A., F.R.I.B.A., 58 Pitt-street.

Official Secretary:

- Mr. John J. Lough, 5 Elizabeth-street, Sydney. Tel., B 4915.

ROYAL INSTITUTE OF BRITISH ARCHITECTS

23rd May, 1922.

Arrangements have been made for the supply of the R.I.B.A. Journal (post free) to members of the Allied Societies who are not members of the R.I.B.A. at a specially reduced subscription of 12/- a year.

Those who wish to take advantage of this arrangement are requested to send their names to the Secretary of the R.I.B.A., 9 Conduit Street, W.1.

IAN MacALISTER,

Secretary.

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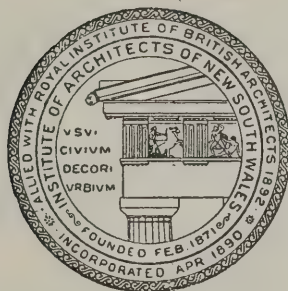
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ARCHITECTURE

THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



AUGUST 15TH
1922

VOL 11. No. 8

PRICE ONE SHILLING

INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

MINUTES OF A GENERAL MEETING

Held at the Royal Society's Hall, 5 Elizabeth Street, Sydney, on Tuesday, 11th July, 1922, at 7.30 p.m.

Present:

Mr. B. J. Waterhouse (Vice-President) was in the chair, the President, Mr. G. H. Godsell having been called to Melbourne on urgent business. Forty members and visitors attended.

The visitors were Mr. W. Fielding, Architect, Hon. Treasurer of the New Zealand Institute of Architects; Mr. Fyall, representing Mr. H. Sundercock, Hon. Secretary of Riverstone Progress Association; Mr. J. J. Price, Mr. W. F. Morgan and Mr. C. Hickson.

Apologies.

A letter of apology for absence was read from the President. Other apologies were tendered by Professor Wilkinson, Messrs. R. W. Pickering, G. Sydney Jones, F. Glynn Gilling, and H. E. Budden.

Minutes.

The Minutes of the meeting of 13th June were read and confirmed.

Mr. S. M. Mould.

The Chairman referred to the sad motor accident sustained by Mr. Mould, whereby he had suffered the loss of a dear relative and had reason for grave anxiety concerning his wife. The Council had that afternoon carried a vote of sympathy, had ordered a wreath to be forwarded, and requested the Secretary to attend the funeral service. The meeting endorsed the Council's action and stood in silence for a minute as a mark of respect.

New Members.

The Chairman welcomed the following new members, who were attending for the first time since their election, and handed them their certificates of membership:—Mr. Dawson Reeves (F.), Mr. A. E. Stafford (A), Mr. O. A. Beattie (A.), Mr. B. Tojkander (A.).

Martin Place Extension.

The Chairman referred to the special general meeting which had been called for Friday, 14th July, to enable members to voice their opinions upon this question.

Canberra's Future Architecture.

Attention was called to the President's article upon this subject which appeared in the press of Australia on the 21st June. Members were requested to send in any comments they might wish to make, in writing to the Secretary as soon as possible. The article would appear in the July number of *Architecture*.

War Service Homes.

Report was made as to assistance rendered by the President and Council to the Deputy Commissioner

of the War Service Homes Commission, and a letter of thanks from him was read.

The Federal Council of the Australian Institute of Architects.

The report of the meeting of this body, which was held in Melbourne on February 3rd and 4th, 1922, and which was published in the June issue of *Architecture*, was submitted to the meeting for adoption and approval of certain amendments in the constitution. The report was unanimously adopted on the voices.

Kiosks for Returned Maimed Soldiers.

Mr. Waterhouse said that the President had furthered the Lord Mayor's scheme by undertaking, jointly with the Master Builders, to provide the funds for two kiosks which would cost about £120 each. The President had acted in all good faith and the members were expected to back him up to the extent of a few shillings each in order to remove the reproach of begging soldiers from Sydney streets and enable them to earn a living independently of charity. Letters of appreciation were read from Mr. H. G. Dick, Hon. Secretary R.S.S.I.L. of A., Kensington District Sub-Branch, and from Mr. R. E. Knipe, of Melbourne.

Publication of Tenders.

The Master Builders' Association had made a request to the Institute to consider the advisability of adopting a uniform system for notifying unsuccessful tenderers how they stand. The subject was introduced to the meeting and was spoken to by Messrs. A. F. T. Somerville, J. C. R. Mills, J. J. Copeman, H. McB. Gardiner-Garden, D. T. Morrow, R. Keith Harris, G. A. Roberts, R. Louat, G. S. Keesing and E. O. M. Rowlinson. After lengthy discussion, the following resolution was carried unanimously: "That this Institute thinks it inadvisable to adopt a uniform system in regard to the relative amounts of tenders, but that action be left to the discretion of the individual architect."

Advertising on Tram Cars.

Mr. Rutledge Louat drew attention to the unsightly advertisements which were now disfiguring the tram cars in Sydney. Other members spoke of the ugly hoardings at the Spit and the hideous signs at the Central Railway Station. It was resolved to send a letter of unqualified protest to the Railway Commissioners and to forward copies for publication in the Press.

Lecture.

Mr. R. Race Lewis delivered a lecture upon the "Sydney Expansion" Scheme and Warragamba Water Irrigation Scheme.

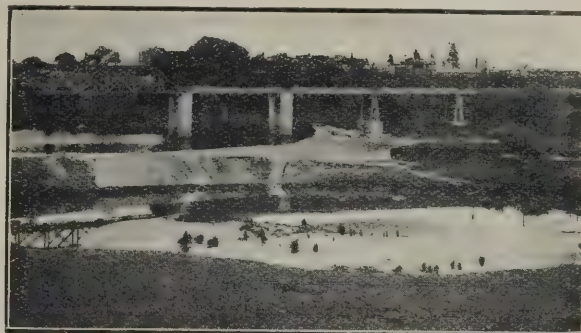
The problem which is occupying the minds of our leaders in Australia, and in New South Wales in

can easily be improved by opening up the vacant lands about Sydney.

The scheme for the expansion of Sydney has been working in my mind for over 24 years, and has grown upon me to that extent that I am able to place before you a scheme which, if accepted and carried out, will



George's River at junction with Prospect Creek, looking East where Canal enters River.



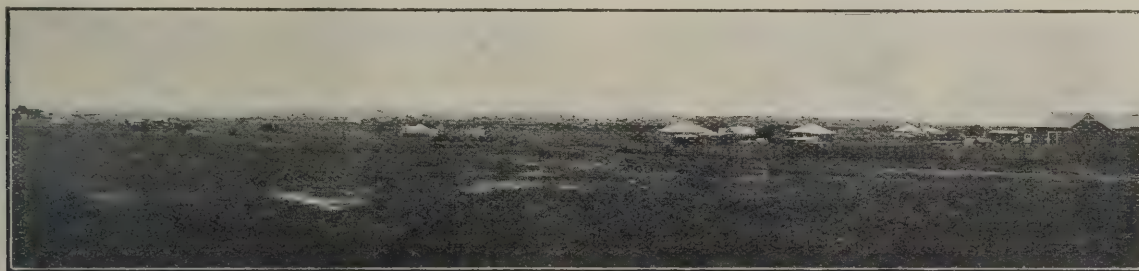
The Dam at Liverpool from South side where Wharf is proposed to be built.

particular to-day, is how to find work for the unemployed, many of whom have been forced out of work through no fault of their own, but through the short-sightedness of those in power.

Australia, and especially New South Wales, offers every facility for advancement. There is to be found vast quantities of, I might say, every mineral required in the various branches of manufacture.

not only relieve the city of its dreadful congestion, but will enable it to expand and throw itself out to Parramatta, or even further, and would find an avenue for the manufacturer to invest his money, in opening up industries, which, in the natural course of events, will find work for all the unemployed.

At the present time we have within the area lying between Strathfield, Penrith and Liverpool, 155 estab-



Panoramic view from Clyde, looking East.

Then we have millions of acres of land lying idle which should be yielding revenue to the country—land that will produce anything and everything.

The question then naturally can be asked: Why is this land not producing? The answer is obvious—for want of proper legislation to enable investors to come and open it up. It is no use bringing out the thousands of immigrants to go on the land unless the means are provided to enable them to get their produce readily to the nearest market.

I do not at present intend saying more on *this* vast subject, but will simply confine myself to that portion nearer home, and, by doing so, try to show how matters

lished works and industries employing 7,964 hands. These works paid out in 1920-21 £1,425,638 in wages and salaries; the value of the materials used in the same period amounted to £5,353,569; and the value of fuel consumed was £222,941, giving an output from this area of £8,558,691. These figures are from the State Statistician. This large output is being secured under most adverse conditions, and would be greatly increased if there was water carriage.

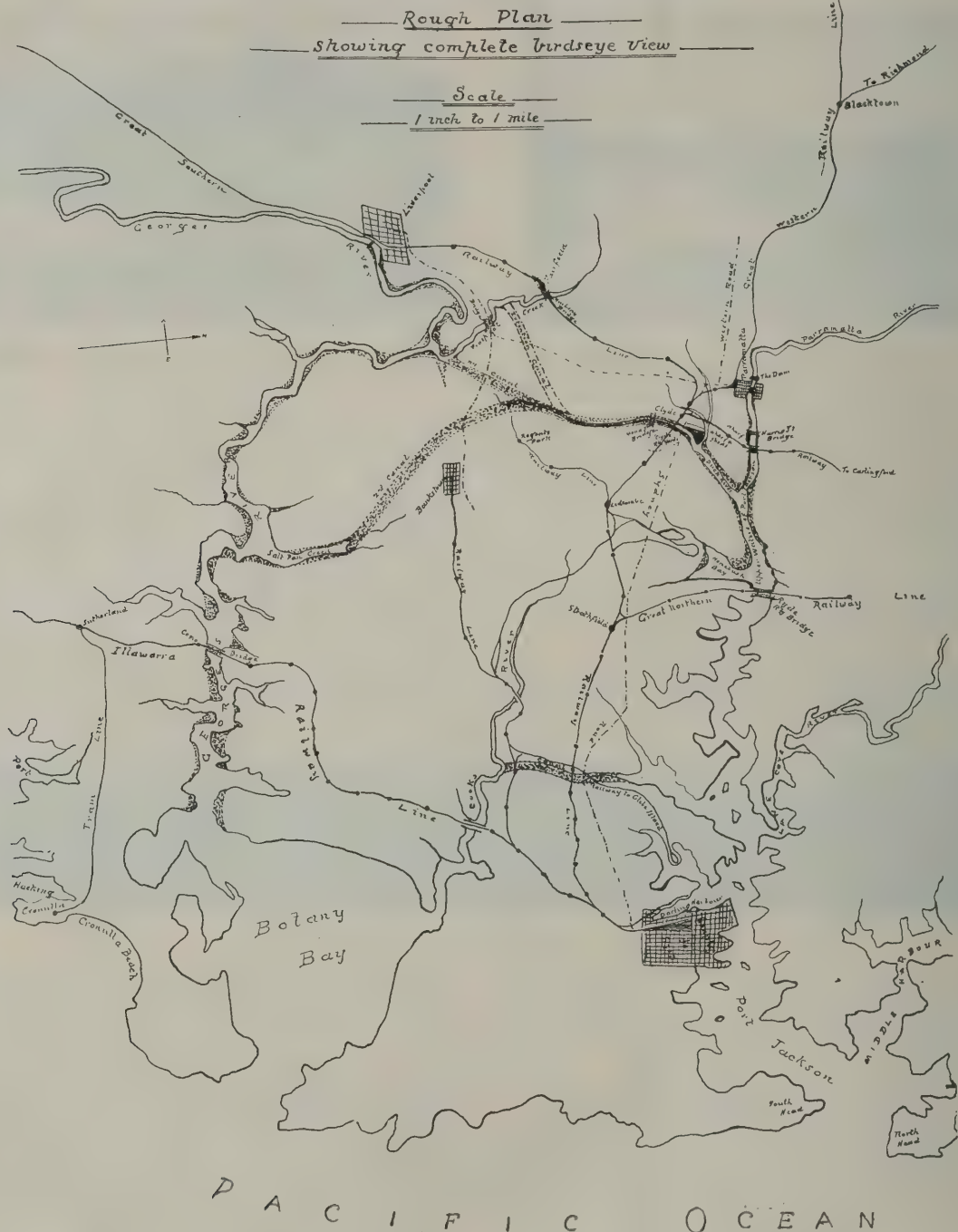
The present lightering tonnage of goods on the upper waters of Port Jackson averages, one week with another, about 10,000 tons per week, which, at an average rate of, say, 6/- per ton, would mean £3,000

per week, or £156,000 annually. The foregoing figures speak for themselves.

The scheme which I now place before you opens up some 40 miles of country in close proximity to the

sites, and if this were done by the Government, and the land let on lengthy leases, there would be a permanent revenue of between, roughly, £500,000 and £1,000,000 annually, which could be ear-marked for

No. 1A Sydney's Expansion Scheme.



water-ways. The nature of the country lends itself to the establishment of factories, etc.; it is of little use for agriculture or residential purposes. There are fully 10,000 acres that can be resumed for factory

anything that was required, or go towards paying any interest that might have to be provided for.

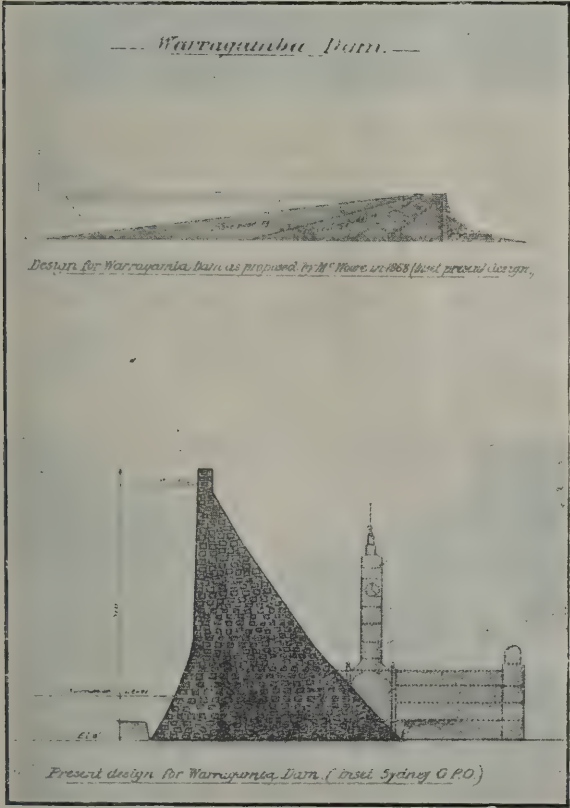
The scheme embraces the opening up of these upper waters of Port Jackson, and the linking of them to

George's River, with terminal wharfs at Parramatta and Liverpool, with the main export wharf at Clyde, where all goods for export would be received direct from the producer by both rail and water, and placed in the Railway and Shipping building—where it would be handled under cover all the year round in all weathers, thus releasing the trucks to the Railway Commissioners every 24 hours.

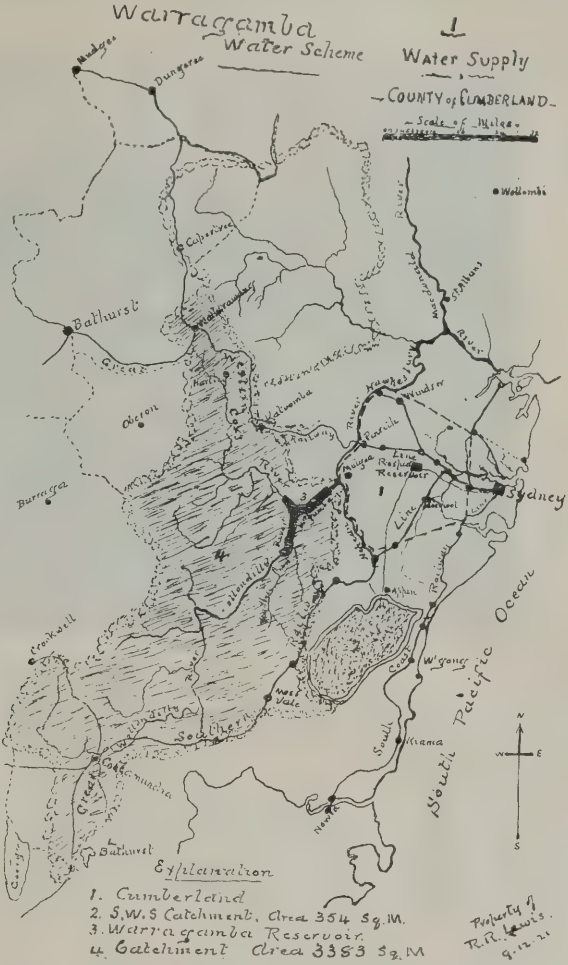
By making Clyde the export base it would relieve both the railways of that extra 14 miles run to Darling Harbour and the city streets of the heavy goods traffic that now exists, which causes so much congestion.

In reference to the George's River, all that would be required would be the straightening of the bends and dredging where required to the depth of 10 feet low water. By doing this from Botany Bay to Liverpool it would provide ample means to lighter goods either to Clyde for export via the canal or Botany Bay, where shipping facilities could be provided, by building two retaining walls, one from La Perouse

Harbour. (By cutting a canal between $1\frac{1}{2}$ to 2 miles long between Long Cove and Cook's River, 10 feet deep and 66 feet wide, a connection could be made for



to the entrance to Cook's River, and one from the entrance to Cook's River to the entrance to George's River, reclaiming the land behind these walls—it would provide many acres of most valuable land for factory sites, and would afford further shipping facilities from Botany Bay, and thus greatly relieve the congestion around the water-fronts at Darling



lightening purposes between Darling Harbour and Botany Bay.)



Entrance of River into Nepean at the back of Mulgoa. The position of wall.

The cost of this scheme would run, roughly, into about £10,000,000. This sounds a big amount, but when we look at the vast potentialities the scheme presents, when even now there is over $8\frac{1}{2}$ millions (£8,500,000)

1

2

3



1 By Wash. 2 Bed of River. 3 Position of Wall.

sterling being turned over, an amount that could be easily quadrupled in five years, after the work is completed.

As touching the Warragamba Water Irrigation Scheme, it is not my intention to go deeply into the matter to-night, but simply to place before you a few reasons why it is a most needed work to be done, as follows:—

1. Its position geographically lends itself for irrigation purposes, being within 50 miles from Sydney, with a catchment area of 3,383 square miles.
2. Because the country east of the Blue Mountains, known as Central Cumberland, is flat and undulating, and, by a system of water irrigation, would produce fruit second to none in Australia, especially grapes.
3. Because it would open up thousands of acres of land now lying idle, for those who wished to settle down near the city.
4. Because by a system of water irrigation, fruit, vegetables, fodder and many other household commodities that have to be imported from Victoria and other States, will then be produced in Central Cumberland at a great saving to the consumer.
5. Because it would afford, in addition to irrigation purposes, a stand-by provision for supply-

ing Sydney with water should anything happen to the present Prospect supply. This could be done by laying a separate service pipe to Pott's Hill Dam; although it would be of

far greater value to utilise the Warragamba for irrigation purposes only.

These two schemes could be carried through for, roughly, about £5,000,000, or the whole scheme, including the cost of the North Shore Bridge, for, roughly, between £15,000,000 and £17,000,000.

In conclusion, I expect that you are asking the usual question within yourselves, "Where is the money



The position where wall will be erected.

coming from to do this work?" To this question I can assure the Government that it can be done, and, if needs be, the "North Shore Bridge" can be included, and the

cost to the Government will be practically nothing.

A vote of thanks to Mr. Lewis was proposed by Mr. G. A. Roberts, seconded by Mr. J. D. Moore, supported by Messrs. R. Louat, R. Keith Harris and J. J. Cope-

man. The vote was conveyed to Mr. Lewis by the Chairman with a happy endorsement, and it was carried by acclamation.

The meeting closed at 10.20 p.m.

INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

MINUTES OF A SPECIAL GENERAL MEETING

Held in the Royal Society's Hall, 5 Elizabeth Street, Sydney, on Friday, 14th July, 1922, at 8 p.m.

Chair.

Mr. B. J. Waterhouse, F.I.A., presided, Mr. G. H. Godsell, F.I.A., the President, being unavoidably absent in Melbourne on urgent business.

Attendance.

There were also present:—*Fellows*: Messrs. J. S. Adam, A. W. Anderson, J. Barr, J. Burcham Clamp, J. J. Copeman, T. F. Cosh, H. C. Day, W. de Putron, G. W. Durrell, B. W. Ford, W. H. Foggitt, F. Glynn Gilling, G. L. Grant, J. E. Justelius, J. A. Kethel, R. Louat, R. V. Minnett, D. T. Morrow, J. P. Power, D. Reeves, G. A. Roberts, E. A. Scott, A. Spain, E. L. Thompson, H. V. Vernon, Professor Wilkinson. *Associates*: Messrs. O. A. Beattie, H. E. Budden, J. Crust, W. O. England, A. C. Fair, E. R. Green, R. Keith Harris, J. N. Hoare, S. J. Hurd, G. S. Keesing, J. A. Kerr, L. C. McCredie, C. H. MacKellar, J. D. Moore, S. Robertson, T. M. Scott, S. A. Seaton, B. Tojkander, D. W. Walford, E. B. Wilshire.

Notice.

The notice convening the Special Meeting was read.

Apologies.

Letters of apology for absence were received from the President (Mr. G. H. Godsell), Messrs. G. Sydney Jones, J. Sulman, J. Reid, J. Peddle and R. W. Pickering.

Correspondence.

The President's letters of 1st and 6th July to the *Sydney Morning Herald* were read at his request, also letter from Mr. G. Sydney Jones, letter and report from Mr. J. Sulman, letter from Mr. J. Reid.

Mr. T. F. Cosh wanted to know why the Council had represented that the Institute was against the Martin Place extension when the Institute had not been consulted.

Mr. E. R. Green said that the members had assembled to express their views upon the Martin Place extension and not upon the Council's action. He urged speakers to confine themselves to the

substantive question as set forth in the notice convening the meeting.

Introductory.

The Chairman, in opening the meeting, said that it was expected that members would confine themselves in speaking strictly to the question of the extension of Martin Place and avoid all personalities. The President and Council had devoted a great deal of time and attention to the matter of the Martin Place extension and had arrived at the conclusion that the improvement of the city as a whole was the end to be aimed at, and that concentration upon a scheme which might not be included in the ultimate developmental plan would be a mistake. Improvements in cities of Europe would be demonstrated by slides which would be projected on the screen, and if those pictures carried conviction to the minds of members the meeting would forget Martin Place and determine to unite in helping to promote the formation of a Board which would evolve a plan for the progressive development of Sydney. The Chairman called upon Mr. R. Keith Harris to give an address while the slides were being shown.

Mr. R. Keith Harris.

Mr. Keith Harris said that he felt diffident at opening so important a discussion, and supposed that he had been called upon because he had prepared a few diagrams indicating suggestions for the proposed extension of Martin Place and alternative. That the views he expressed were entirely his own, and not being a fluent speaker, he asked their indulgence to show a few slides to demonstrate his remarks.

He said the first point was to decide the issue as part of the city plan. There appeared to be some confusion of ideas as to whether Martin Place was really a "place" or a "street"; if the former, then to extend it were to deprive it of its character; if the latter, its extension must be regarded in the light of its utility as a thoroughfare. In this he felt that it

would fail as, he believed King Street was the natural thoroughfare, and that owing to the tendency for its buildings to rise higher year by year, its widening was imperative from the point of view of light and air, and that such a widening would naturally solve its traffic congestion. He further advocated his previous suggestion for a Piazza from King Street to the G.P.O., allowing for the extension of that building and by giving it an island site more than double the public space. It would furthermore open up a light area into King Street and provide a real space almost identical in area with the original design for Martin Place when that was to extend to the Equitable Buildings, and would, moreover, provide a "gyratory" traffic circus at the intersection of King and Pitt Streets to avoid collision points. Apart from the serious grade of the proposed extension of Martin Place, he felt that it would be a great mistake to attempt artificially to divert the natural traffic from King Street, as it would not solve the problem and would moreover render the chance of ever widening King Street very problematical.

From the æsthetic viewpoint, the speaker alluded to the convex contour of the proposed extension, pointing out that even if a building were erected at Macquarie Street to close the vista, it would not be visible to the ground from Castlereagh Street. He further said that Martin Place was far from beautiful owing to the unrelated design of its buildings, practically all of which were new, and therefore not likely to be redesigned for very many years. Whereas there were only one or two large buildings in King Street, the majority of the others would have in any case to be rebuilt very soon, and thus there would be given an opportunity to make a really beautiful and practical thoroughfare.

He suggested that instead of extending Martin Place, the proposed bank building should be moved south so as to come axially opposite and fittingly terminate that street at its Castlereagh Street end.

Pictures were thrown on the screen showing views of several Parisian streets and "places" both in that city and in London, and in contrasting them with our own, especially in regard to the view showing the present state of King Street, Mr. Harris appealed for a larger point of view in regard to our civic improvements.

At the request of Mr. Waterhouse, additional slides were exhibited illustrative of Mr. Harris' scheme for a "place" in King Street to the south of the G.P.O., which involved the resumption of all private property in the Post Office block up to King Street and the addition of east and west wings to that structure. Mr. Waterhouse reminded the meeting that this was Mr.

Harris' original idea. Mr. Harris had given an illustrated lecture before the Institute on the subject on May 27, 1920, as recorded in the June, 1920, issue of *Architecture*.

Mr. J. Burcham Clamp.

Mr. Clamp moved:—

"That this Institute approves of the extension of Martin Place, and that it ask the Savings Bank Commissioners to give some consideration in return for the corner site which they will have by this extension."

Mr. Burcham Clamp referred with pleasure to the excellent attendance of the members, which evidenced the interest in the Martin Place extension movement. He also assured the President and Council that although he and many of the members had taken exception to the Council's public attitude and utterances without consultation or discussion with the general body of the members, they had no personal feeling against the Council, and still remained loyal to the Institute.

Mr. Clamp spoke strongly in favour of the extension, and quoted from the Royal Commission Report on the improvement of Sydney, which Commission comprised Mr. E. A. Scott (then President of the Institute) together with the late Col. Vernon (Government Architect) and all the leading experts, architects, engineers and surveyors of the city, and said that the Martin Place extension, which was part of their recommendation, was the only one that had not been carried out up to the present. Strange to relate, Mr. John Sulman (now President of the Town Planning Association) strongly advocated the new street before the Commissioners.

Mr. Clamp asked the members: Were the new Wentworth Avenue, the widening of Oxford Street and the remodelling of the southern end of the city any improvement and would they like the old conditions reverted to? As to the Martin Place extension, the erection of the new Rural Bank, of which the excavation work was now progressing, had forced the situation, and he implored the members of the Institute (to whom the ratepayers and the general public looked for a lead) to use their best endeavours and ask the Rural Bank Commissioners to stay their hands, and to also point out to the Commissioners the immense advantages that would accrue to the Bank by the acquisition of a new and magnificent corner site with 150 feet frontage to the new Martin Place, which, apart from the direct street lighting to front offices on the upper floors, would save them a great portion of the internal light areas. In addition, the Elizabeth Street frontage would be considerably enhanced in value.

He differed from the President in his contention that

the Bank on a corner site, in lieu of having only a portion (73 feet) visible from the G.P.O., would not be an artistic improvement, and Mr. John Sulman had agreed with him on this question.

As to the utilitarian benefits, these were self-evident, and, with regard to the grade, eminent surveyors had reported that the new street would not be any more than King Street and less than Phillip Street. King Street, between 4.30 and 6.30, was now closed for traffic from the city to the eastern suburbs.

He also said that if the owners of the Victoria Arcade were to close the arcade for 24 hours, the general public would see the utility of the new street. He did not object to the widening of Park Street or King Street, but they were in existence and could be carried out later, but the opportunity now faced them for an opening between King and Hunter Streets (about 1,000 feet), and unless they acted at once the same would be lost for ever.

Mr. E. R. Green.

Mr. E. R. Green seconded the motion, and said: The opportunity to extend Martin Place, afforded by the activities of the Bank, differs in one vital respect from the various other schemes for improvements within the city that we now hear discussed. We must do it now or never, so far as the lifetime of those in this room is concerned.

The essential considerations I take to be: What are the benefits to be achieved? What the probable cost? Do the benefits justify the cost? As for the benefits:—

(1) We would make available for a greater Sydney than ours a broad, main avenue serving a compact and well-ordered office and residential hotel centre. This, and the streets branching therefrom, would be ample for our needs for many years to come.

It would greatly relieve an already congested King Street, into which must flow (with completion of the first section of our city railway and its terminus at Queen's Square) a great stream of pedestrian traffic. I suggest that, if it be practicable, the Queen's Square outlet of this station be extended under the square to a discharge on the northern side thereof to avoid the dangerous intersection of such traffic with the existing tram service and the heavy motor traffic at this point. From such a point a large part of such pedestrian traffic would pass safely and in comfort *via* Phillip or Macquarie Street and down the new main avenue into the city. For vehicular traffic it would likewise be of value and would relieve King Street in so far as the busy section between York Street and Queen's Square is concerned, and, if later, the widening of further east and west streets should make it practicable to free Martin Place from heavy vehicular traffic, then I think the extended street would enter upon its happiest

period, and with a proper governance of its architecture be for all time a spacious and dignified avenue not ill becoming the importance of this part of the city. Elizabeth Street I hold should in this part at the same time be re-aligned to a width of 100 feet.

(2) Of those who find in their advocacy of a widened King Street their chief objection to an extended Martin Place, I ask consideration of the following figures:—Taking the Council's scheme of resumption as a basis—Total area resumed, 113,500 feet super. Cost (land and buildings), £500,000= approximately £4/10/- per foot super.

Compare with this that within the last fortnight for a site on the north side of King Street, between Elizabeth and Castlereagh Streets, having 20 feet frontage by a depth of 54 feet, with an unimportant building thereon, a sum of £20,000 was paid, which works out at approximately £18/10/- per foot.

Consider, further, the question of residue land. In the Martin Place scheme the residue (under the Sub-Committee's first scheme) is 66,300 feet super, and that residue substantially appreciated in value. In King Street resumption for widening would involve serious reduction of the depth of the present shallow frontal blocks with a probable diminution in the relative value, or, alternatively, resumption of the structures adjoining Street, with consequent highly increased first cost and claims for disturbance. The claims for disturbance throughout must obviously be infinitely higher in King Street, with its many licensed houses and flourishing businesses than in the area affected by the Martin Place proposal.

(3) The new Bank—the contemplated erection of which brings this suggested development forward, will be one of Sydney's greatest buildings. Is there in Sydney a building of equal importance which does not enjoy that added dignity and monumental effect offered by the return facades? By the extension of the thoroughfare we obtain the fullest benefit of the expenditure upon this structure, together with practical advantages of lighting and access.

If, on the contrary, we let the opportunity pass, the eastern terminal of Martin Place as it stands must be spoiled by the juxtaposition of two structures widely divergent in character, scale and height.

I understand that the Sub-Committee advocating the proposal estimates the cost of the resumptions at £700,000, an estimate somewhat higher than that prepared by the Council's officers. The residue land under their scheme is 66,300 feet super, the greatest depth from Martin Place as extended being about 93 feet. The sites available are therefore not too deep to be looked upon as Martin Place frontages, and substantially all will be corner sites.

Assuming an average value of £7 per foot super, this residue is worth £464,000, leaving a deficit of £236,000, to which must be added costs of construction of the new highway and sundry other charges, such as loss of interest, etc. Making liberal allowance, it seems to me the cost should not exceed £400,000.

I understand a later scheme prepared by the Subcommittee shows very much better results than this, but not having seen the proposal, cannot speak in regard to it.

If the matter were such that decision might be deferred till a more convenient time, all would agree to the wisdom of such a course, but as we must decide now, I appeal to those in whose hands the decision lies not to deprive the Sydney that will be of the benefits of this extension because of the little added burden it will mean to us now, but to set an example in courage and optimism to the community they represent, and by linking up to Martin Place those two fine streets to be—Macquarie and Elizabeth Streets—to give to the generations that will fill our places a more spacious and delightful civic centre than our forerunners gave to us, or at very least to re-align the Bank and Elizabeth Street so that without extreme cost it will be possible for a later generation to undertake the task from which we turn away.

Mr. E. A. Scott.

Mr. E. A. Scott supported the resolution, and said that he was a member of the Royal Commission in 1909 which advocated, among other works, the widening of Elizabeth Street and its continuation to Circular Quay, the widening of Pitt Street, and the extension of Martin Place. The opinion of that Commission should have greater weight than the more recent opinions. He suggested that the Savings Bank should be kept back to the northern line of Martin Place and that Martin Place should be extended 100 feet wide to Macquarie Street, with re-alignment of 80 feet on each side for resale. The Savings Bank should assist the extension because it would have a beautiful site with three frontages, the letting value of the offices in the new building would be increased, and no southern light court would be necessary. This light court would require to be 80 feet by 20 feet for the whole height of the building, and if it were omitted £10,400 per annum would be received in increased rentals. He favoured the re-alignment of Market, Park, King and Pitt Streets. He deprecated the blocking of the future necessary widening of important streets and favoured provision being made for Martin Place being carried through to Macquarie Street at its present width.

Mr. A. Spain.

Mr. A. Spain supported the resolution, and said that efforts should be concentrated at this moment upon Martin Place. He read a letter pertinent to the subject which he had written to the *Sydney Morning Herald* in 1907, and congratulated the Chairman upon his conduct of the meeting and Mr. Clamp upon his presentation of the case for the extension.

Other Supporters.

In the long debate which followed, supporters for the resolution were found in Messrs. J. E. Justelius, J. J. Copeman, W. de Putron, G. L. Grant, D. T. Morrow, J. A. Kethel.

Against the Extension.

The following spoke against the resolution: Messrs. A. W. Anderson, J. D. Moore, G. A. Roberts, H. V. Vernon, J. Barr. Professor Wilkinson suggested a modification of the resolution to the effect that the Savings Bank Commissioners should be asked to alter the design of the new Bank so that it would not block the future extension of Martin Place, but Mr. Clamp would not countenance the proposal.

Neutral Debater.

Mr. E. Lindsay Thompson spoke, but adopted a neutral attitude, as he would shortly be called upon to debate the question as an Alderman in the City Council. He attended in order to acquire a knowledge of the views of both sides.

Amendment.

Mr. H. V. Vernon moved, as an amendment:—

"That this Meeting of the Institute of Architects is in favour of preventing any new large building blocking the future extension of Martin Place, but wishes for the proposed Commission on City Improvement to be constituted and deal with the whole question of City Street Improvement."

This was seconded by Mr. A. W. Anderson, put to the meeting, and lost.

The Motion.

The motion proposed by Mr. J. Burcham Clamp was then put and carried by 28 votes for to 19 against.

The meeting terminated about 11.20 p.m.

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
N. S. War Memorial ...	—	Approved.
Port Said Memorial ...	31/3/23	Approved

CANBERRA'S FUTURE ARCHITECTURE

In accordance with the desire expressed by the Federal Council Delegates at the Annual Meeting of the Australian Institutes of Architects, held in Melbourne in February last, to make known to the public the position of the Architects of the Commonwealth with reference to the building of Canberra, as President of that body I wish to briefly state the position as we know it to be to-day.

In 1914 the Institute of Architects, representing each State of the Commonwealth, agreed to form a Federal Council with a view to assisting the Commonwealth Government in connection with all matters of Federal importance, and principally with regard to promoting the Canberra scheme, and in that year the Government invited qualified Architects to compete in an International Competition for the purpose of preparing designs for Parliament House, but owing to the outbreak of War it was publicly announced some months later that there would be a postponement of the Competition, and it was not until 1916 that it was resumed, and the date for submission of designs was fixed for 13th April, 1917.

Prior to the closing date competitors were notified that the Competition would be again suspended until after the War, and from that time the matter has been held in abeyance, although many firms spent a considerable amount of money in the preparation of designs which were nearing completion before the Competition was a second time postponed.

Subsequently the Federal Capital Advisory Committee was formed—composed of two Engineers, one Federal Departmental Architect, one Surveyor, and, as Chairman, an Architect who retired from practice some years ago. No Institute of Architects in the Commonwealth has been represented on that Committee.

Quoting from the first general report of this Committee, dated 29th September, 1921, I find the Graph indicates that the Committee recommends that the following sums be expended on architectural works (1st stage), period of three years—presumably 1922-23-24:—

Parliament House	£110,000
Residential Accommodation for the Governor-General, Members of Parliament and Hostel	149,500
Offices for Central Administration	116,400
Cottages for Civil Servants	330,000
Hostel for Civil Servants	153,900
Buildings for Civic Administration	93,200
apart from minor sums making a total of nearly	

£1,000,000, or, inclusive of Engineering Works, £1,799,000.

Naturally the representatives of the Architectural Profession in the Commonwealth were anxious to know how this sum of money was to be expended, and whether the building of the Federal Capital was to be one of Departmental manufacture assisted by the Advisory Committee. Accordingly, at the Annual Meeting above referred to, I formed one of a deputation composed of the following gentlemen to interview the Minister for Works and Railways and to lay our case before him:—

- L. Laybourne Smith, President of the Federal Council;
- B. J. Waterhouse, Vice-President N.S.W. Institute;
- K. A. Henderson, President Victorian Institute;
- F. Stapley, Victoria;
- R. Martin Wilson, Queensland;
- A. H. Masters, President Tasmanian Institute;
- G. H. Godsell, President N.S.W. Institute;

and at that interview the deputation pressed upon the Minister the point that if this money was to be expended in the best possible manner as relating to the whole scheme of the Capital, surely it was time that the Architects of the Commonwealth were consulted with reference to the matter. The view the deputation took was that whether the proposed expenditure was on residential accommodation for the Governor-General, for Parliament House, or for the most modest Workman's Dwelling, the whole scheme should be one great ideal, built in unison and harmony from the least to the greatest, and surely the Architectural Profession was entitled to a voice in the matter when public money was being spent on a work of this magnitude.

Further, that the best brains of the Architects in the Commonwealth were at the service of the Government and the interests of every Australian Architect was centred on ensuring one great result and avoiding mistakes which would be costly and defeat the great project in view. It was further urged by members of the deputation that the Architects of the Commonwealth were not directly represented, and a request was made to the Minister to allow the Federal Council to nominate a gentleman to act on the Advisory Committee in the interests of the Profession without any cost to the Government to assist the Board, but the reply received on 17th March from the Minister for Works and Railways was to the effect that—

"He had placed the points raised by the deputation before Cabinet and that, after careful consideration, it had been decided that there was no reason that any alteration should be made in the constitution of the Advisory Board."

I annex to this report the shorthand notes of the meeting of the deputation with the Minister for Works and Railways on the 3rd February and a copy of his reply of 17th March, from which it will be seen that the Minister will only go so far as to suggest that when some monumental building is about to be erected the Architects of the Commonwealth should be invited to submit designs, and from this it may be inferred that the work is to be carried out by Departmental Officers. Previous experience in connection with the War Service Homes and other Federal Departmental "Works of Art" as a sample has clearly shown that, should such a course be followed, the Federal Capital is likely to become the laughing stock of other nations.

Departmental Architecture and results contingent upon Departmental methods are so well known throughout Australia that it is the desire of the profession, if possible, to save this country from what will undoubtedly prove disaster, and the wish of the Institute of Architects of the Commonwealth is that the public will assist the profession in an honest endeavour

to bring about such a state of things as will result in the Architecture of the Federal Capital being a credit to the history of Australia.

The contention of the Federal Council—a contention meeting with the unanimous approval of the whole Architectural Profession throughout Australia—is that the works mentioned in the Advisory Committee's Report (1st stage) are of sufficient magnitude and of vital import to the development of the whole Canberra scheme, that an open competition should be held for designs of each group.

The profession bitterly complains of the deliberate efforts of the Government to withhold from public exhibition the Departmental design and proposals, which may or may not be seriously jeopardising the Walter Burley Griffin plan.

In the interests of the future Capital, the public is entitled to hear an expression of opinion from a representative Architectural body such as the Federal Council—and an exhibition of designs should be held to that end.

G. H. GODSELL,

President,

The Federal Council, A.I.A.

Sydney, 18th May, 1922.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THE EXAMINATIONS. QUESTIONS SET AT THE INTERMEDIATE AND FINAL
(OR SPECIAL), JUNE, 1922. THE INTERMEDIATE EXAMINATIONS.

For Registration as Student R.I.B.A.

Morning Sitting, Friday, 10th June, 1921.

A.—GENERAL HISTORY OF ARCHITECTURE AND THE PURPOSE OF ARCHITECTURAL FEATURES IN RELATION TO THE BUILDINGS IN WHICH THEY OCCUR.

(From 10 a.m. to 1.30 p.m.)

Four questions only to be attempted.

1. Illustrate two or more types of peristylar Greek temple plans which were generally typical of their respective geographical positions.
2. Describe the kind of building to which a Roman could go for recreation and amusement at the end of the 1st century A.D.
3. Explain briefly the use of colour in relation to architecture in ancient and medieval buildings.
4. Describe briefly and illustrate the method of construction of the Domes of the Pantheon, Rome; St. Sophia, Constantinople; Duomo, Florence; St. Peter's, Rome; St. Paul's London.
5. Define and illustrate by sketches the following architectural terms:—Cupola, voussoir, scroll, attic, Mansard roof, swag, narthex, sexpartite, and vault.

Afternoon Sitting, Friday, 10th June, 1921.

A.—GENERAL HISTORY OF ARCHITECTURE AND THE PURPOSE OF ARCHITECTURAL FEATURES IN RELATION TO THE BUILDINGS IN WHICH THEY OCCUR.

(From 2.30 to 5.30 p.m.)

Four questions only to be attempted.

1. State what you know about (or illustrate by sketches) any or all of the following:—
 - (a) The architrave of an Order decorated by sculpture.
 - (b) Substitutes for the Ionic column in Greece Proper in which the human form is introduced.
 - (c) Varying treatments of annulets and necking in Doric capitals.
2. What were the main characteristics by Byzantine architecture, and what was the greatest constructive feature achieved by the Byzantine builders?
3. Describe the general arrangement of the Forum of a Roman town and the buildings you would expect to find in its neighbourhood.
Illustrate your answer.
4. Trace briefly the origin and subsequent use of the follow-

ing features:—Obelisk, antefix, pediment, cornice, urn, niche, triglyph, fascia.

5. Mention an Italian, a French and an English architect whose fame rests as much on his writings as on his buildings.

State their approximate dates and what they wrote and built.

Morning Sitting, Monday, 13th June, 1921.

B 1.—SIMPLE APPLIED CONSTRUCTION IN ELEMENTARY DESIGN, AND PROPERTIES AND USES OF ORDINARY BUILDING MATERIALS.

(From 10 a.m. to 1.30 p.m.)

1. Draw to a scale of 1 inch to a foot in plan and section, with all necessary descriptive notes, a deal lantern light in a flat roof, over a room 12 feet wide, 16 feet long, and 9 feet high. The flat is constructed of deal joists covered with boarding and lead, and is plastered on underside. The overall size of the lantern is 4 feet wide, 8 feet long, and 2 feet 9 inches high, with vertical lights all round—the end lights hinged to open. The lantern to have lead covered flat over, with external deal cornice.
2. Draw to a scale of 3 inches to a foot, details of mullions, sill and head of lantern mentioned in Question 1.
3. The walls carrying the flat mentioned in Question 1 are 14 inches thick, with brick footings and 12-inch concrete foundations and are carried up 18 inches above flat level to form parapet 9 inches thick, finished at top with horizontal tile course and brick on edge coping. In the end wall is an external doorway, 7 feet high, and 3 feet 6 inches wide. The floor is 9 inches above ground level, and is constructed of deal joists and boarding, with ventilated space below.
Draw to a scale of $\frac{1}{2}$ inch to a foot a complete section of this wall through the doorway, with all necessary descriptive notes.
4. Draw full size plan through a solid frame to door opening mentioned in Question 3. The frame to be designed to take a 2-inch door, and to be set back 1 inch from the external face of wall.
5. Describe and illustrate by sketches as necessary:—
Block bonding;
Lath and a half;
Swept valley in roof tiling;
Dragon tie;
Lewis bolt.

Afternoon Sitting, Monday, 13th June, 1921.

B 2.—THEORETICAL CONSTRUCTION.

(From 2.30 to 5.30 p.m.)

Not more than ten questions are to be attempted, of which three must be selected from the first five on this paper.

The linear scale, scale of forces and scale of moments must be stated in words in every case where such scales are used.

1. A lever A B, 10 feet long, weighing 1 cwt. per foot run, is pivoted at A and carries two loads, each of 8 cwt., at 4 feet and 6 feet from A. What upward force at B is necessary to effect a balance?
2. A girder 20 feet long, weighing 8 cwt., has one cross joist weighing 4 cwt. riveted on at 5 feet from one end, and another weighing 2 cwt. at 4 feet from the other end. At what point on the girder will the whole balance in a hoisting sling?
3. A bressummer, 12 feet span, carries an equally distributed load, including its own weight, of 1 cwt. per foot run. It also carries a concentrated load of 6 cwt. at 4 feet from one bearing and a concentrated load of 12 cwt. at 2 feet from the other end. Calculate the reactions at each bearing.
4. A block of stone, weighing 24 cwt., is hung on a wire rope 15 feet long. It is pulled horizontally 9 feet to one side. What is the horizontal pull required and what is the tension in the rope?

5. Define briefly what you understand by the terms:—

- (a) Bending Moment (B M)
- (b) Moment of Resistance (M R)
- (c) Section Modulus (Z)
- (d) Fibre stress (f)

$$\text{Show that } f = \frac{B M}{Z}$$

6. Draw the shear diagram of the girder in Question 3. Locate the maximum bending moment. What would be the maximum fibre stress if a fir joist 4 inches wide and 9 inches deep were used?
7. A farm gate, 9 feet long, weighs 1 cwt. It is hung on hook and ride hinges 54 inches apart vertically. Each ride takes half the weight of the gate. A boy weighing 84 lb. stands on the bottom rail of the gate 81 inches horizontally from the bottom ride. What is the horizontal pull on the top ride?
8. A girder A C carries a distributed load, including its own weight, of 8 cwt. per foot run. It bears on two walls, A and B, the centres of which are 16 feet apart. It also projects beyond B to a point C, 4 feet from B, where it carries a concentrated load of 2 tons. What is the nature and amount of the load on each wall?
9. Draw the shear and bending moment diagrams of the girder described in Question 8, and state what section modulus would be required to restrict the fibre stress to 7 tons per square inch.
10. A plate girder, 40 feet span, carries a distributed load, including its own weight, of 2 tons per foot run. The effective depth is 40 inches, and the permissible stresses are:—

Bearing, 11 tons per square inch.

Single shear, $5\frac{1}{2}$ tons per square inch.

Double shear, $9\frac{3}{8}$ tons per square inch.

Fibre stress, $7\frac{1}{2}$ tons per square inch.

Calculate the net flange area required, sketch a suitable section and specify the rivet diameter and pitch for the end bays with $\frac{3}{8}$ -inch web plates.

11. A brick chimney stack, 18 in. by 18 in., with a 9 in. by 9 in. flue, is 9 feet high and weighs 15 cwt. It is exposed to a wind pressure equivalent to a steady pressure of 30 lb. per foot super over one face. Neglecting the strength of the mortar joints, is it safe from over-turning? What are the maximum and minimum pressures on the base?
12. A roof, 40 feet span, 10 feet rise, is supported by a ridge and three equally spaced purlins to each slope. The dead weight of covering, rafters, purlins and truss is equivalent to a vertical load of 300 lb. on the ridge and each purlin.
Ascertain the direction and amount of the reactions on each abutment.

- (a) With a wind pressure on one slope equivalent to a steady pressure at right angles to the slope of 300 lb. on each purlin on the windward side, 150 lbs. on the ridge and no pressure or suction on the leeward slope;
 - (b) With a suction in addition on the leeward slope at right angles to the slope of 300 lb. on each purlin and 150 lb. on the ridge.
13. A test stick of home-grown timber, 1 inch by 1 inch by 36 inch span, breaks under a load of 200 lb. slung on two points 9 inches from each bearing, having deflected $\frac{1}{4}$ inch when the test load had reached 331.3 lb. Approximate from this data:—
(a) The safe distributed load on a 2-inch by 6-inch beam of the same timber, 9 feet span, allowing a factor of safety of 6.
(b) The deflection under the load (a).
(c) The ultimate fibre strength (f) of the timber.
(d) The elastic modulus (E) of the timber.
 14. The haunches of a segmental arch ring, 12 inches deep, 9 feet span, 3 feet rise, are levelled up with masonry of the same weight per foot cube as the arch material, and are loaded in addition with 2 cwt. per foot super. Ascertain whether the line of thrusts falls within the middle third of the voussoirs.

Morning Sitting, Tuesday, 14th June, 1921.**C.—A PAPER DEALING WITH ONE OF THE FOLLOWING SUBJECTS PREVIOUSLY SELECTED BY THE CANDIDATE.****1.—HISTORICAL ARCHITECTURE—(a) GREEK AND ROMAN.****(From 10 a.m. to 2 p.m.)****Four questions only to be attempted.**

1. Sketch in plan and elevation the general arrangement and structure of the cella wall (exterior face) of a Greek temple of the 5th century B.C.
2. Illustrate *either* (a) A Greek doorway;
or (b) A Greek Ionic capital in front and end elevation and section.
3. What were the principal characteristics of the Ionic Order in Asia Minor as opposed to those in Greece Proper?
4. Describe and illustrate from a purely constructional point of view the methods adopted in building:—
either, The Basilica Aemelia, Rome;
or The Colosseum, Rome.
5. What do you know of the design of the Pompeian house? Illustrate your answer by plan and sketches of (if possible) actual buildings.
6. Compare (a) the plan, (b) the proportion, (c) the details of a Greek temple of the 5th century B.C. with those of a Roman temple of the time of Augustus.

1.—HISTORICAL ARCHITECTURE—(b) BYZANTINE AND ROMANESQUE.**NO PAPER SET.****Morning Sitting, Tuesday, 14th June, 1921.****1.—HISTORICAL ARCHITECTURE—(c) ENGLISH AND FRENCH GOTHIC.****(From 10 a.m. to 2 p.m.)****Four questions to be answered.****All candidates are expected to answer No. 1.**

1. Draw the plan and longitudinal section of an imaginary English church of which the tower and nave are of the 12th century, the chancel of the 14th century, and a side chapel of the late 15th century. The last named should be illustrated by a sketch elevation.
2. Illustrate by sketches and in parallel form the development of window tracery in England and France.
3. What are the main differences, especially as regards construction, in the development of French and English church architecture in the 15th century? Illustrate your answer.
4. Describe briefly one of the following cathedrals: Chartres, Amiens, Lincoln, Wells. Illustrate your answer with sketches which should include a plan.
5. Describe and illustrate by a plan the typical arrangement of an English or French castle or manor house of the 15th century.
6. Explain and illustrate the following items: Parclose, extrados, corbeltable, broach, boss, dogtooth, hammer-beam, chevêt.

Morning Sitting, Tuesday, 14th June, 1921.**1.—HISTORICAL ARCHITECTURE—(d) ITALIAN, FRENCH AND ENGLISH RENAISSANCE.****(From 10 a.m. to 2 p.m.)****Four questions to be answered.****All candidates are expected to answer No. 1.**

1. Sketch—in outline only—the plan which would be usual in (i) a Florentine palazzo of the 15th century, (ii) a French château of the 16th or 17th century, and (iii) an English country house of the time of Elizabeth or James I. In each case name an actual example planned on similar lines.
2. Give the approximate dates of the following Architects and name a building by each of them: Brunelleschi, Peruzzi, De l'Orme, Claude Perrault, Vanbrugh, Soane.
3. Sketch to half-inch scale a typical window of an English and of a French house of the time of Wren, showing the method of glazing and naming the parts in English.
4. In what way do the styles known as "Louis XV." and "Louis XVI." differ? How far was French Architecture during the reigns named affected by these styles? Illustrate by sketches.

5. Name three of the principal Architects who took part in the building of St. Peter's, Rome, and describe briefly what influence each had upon the design of the present edifice.

6. Define and illustrate where possible by sketches the following terms:—cartouche, rustication, module, lucarne, arabesque, intarsia, Baroque, cornicione.

Morning Sitting, Tuesday, 14th June, 1921.**2.—MATHEMATICS AND MECHANICS.****(From 10 a.m. to 2 p.m.)****Candidates must not attempt more than 9 questions. All calculations must be shown.**

1. (a) Divide 20 into four parts which are in arithmetical progression and such that the product of the first and fourth parts is to the product of the second and third parts in the ratio of 2:3.
(b) Sum the series $1.2+2.3+3.4 \dots$ to n terms.
2. A man has twenty-seven coins in his pocket which consist of sovereigns, half-crowns and shillings, and the amount is £5 os. 6d. How many coins of each sort has he?
3. In how many ways can twenty shillings be divided among five persons so that no person receives less than three shillings?
4. A and B motored on the same road from Bath to London. At the 75th milestone from London A overtook a carriage which was proceeding at the rate of 10 miles an hour; and one hour afterwards met a waggon which was moving at the rate of 5 miles an hour. B, who left Bath later than A, overtook the same carriage at the 65th milestone, and met the waggon 9 minutes before he came to the 50th milestone. How far was B from London when A reached London?
5. A stone is dropped into a well and the sound of the splash is heard in 7.7-10 seconds; if the velocity of sound be 1,120 feet per second, find the depth of the well.
6. A pendulum suspended from the top of the dome of St. Paul's Cathedral just clears the floor; assuming that the top of the dome is 350 feet above the floor, find how long the pendulum takes to make a complete oscillation.
7. Describe a balance and explain its essential requisites. Describe what is meant by double weighing.
8. Describe in simple language what is meant by the centre of gravity.
ABC is a uniform triangular plate of mass 3 lb. Masses of 2, 3 and 5 lb. respectively are placed at A, B and C. Find the position of the centre of gravity of the whole system.
9. The sides of a triangle are in the ratio of $2 : \sqrt{6} : 1 + \sqrt{3}$. Determine the angles.
10. Prove that the area of a quadrilateral which can be inscribed in a circle is $(\sqrt{s-a} \sqrt{s-b} \sqrt{s-c} \sqrt{s-d})$ where a, b, c, d are the four sides and s is half the sum of the sides.
11. Find the value of $\sin 18^\circ$.
12. Prove either geometrically or analytically that if chords are drawn from any point on an ellipse to the two foci the sum of these two chords is constant and equal to the major axis.

Morning Sitting, Tuesday, 14th June, 1921.**3.—DESIGN.****(From 10 a.m. to 2 p.m.)**

A carriage entrance gateway to the forecourt of a town mansion. The gates to be constructed of wood, and designed between stone piers, carrying lamps, in a wall 9 feet high. The maximum width of the opening between the piers not to exceed 12 feet.

Drawings required: Plan and elevation to $\frac{1}{2}$ -inch scale.

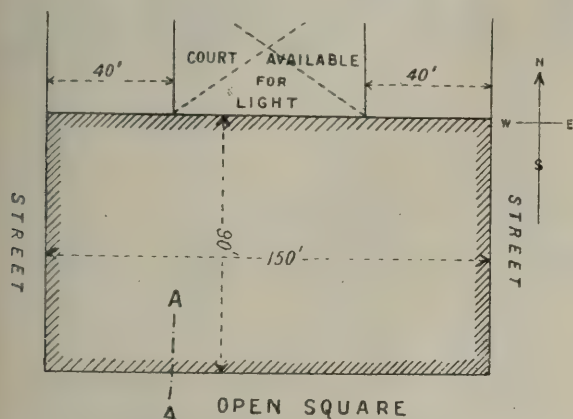
THE FINAL EXAMINATION.**Qualifying for Candidature as Associate R.I.B.A.****A.—DESIGN.**

Thursday, 23rd June, 1921 (Morning, 10 a.m. to 1.30 p.m.; Interval, 1.30 to 2.30 p.m.; Afternoon, 2.30 to 5.30 p.m.).
Friday, 24th June, 1921 (Morning, 10 a.m. to 1.30 p.m.; Interval, 1.30 to 2.30 p.m.; Afternoon, 2.30 to 5.30 p.m.).
Saturday, 25th June, 1921 (10 a.m. to 1.30 p.m.; Interval, 1.30 to 2.30 p.m.; Afternoon, 2.30 to 5.30 p.m.).

THE MAIN HALL OF AN IMPORTANT ENGLISH BANK.

This Hall to be designed in a monumental and dignified manner, suitable to an establishment of great financial reputation.

The dimensions and arrangements of the available site are shown on the accompanying Sketch plan.



The purpose of the programme is to test the capability of the candidates to design an architectural interior in good proportion, and therefore the height of the Hall, the allocation of the floor area, the arrangement of the window and door openings, the lighting, etc., are to be determined by the candidates.

Ample counter accommodation should be provided, and the space for the public arranged so as to give customers of the Bank convenient access to the departments on the ground and upper floors and to a Safe Deposit which would be situated in the basement. In this basement, the height of which would be 14 feet floor to floor, would also be placed the Bank strong rooms, not accessible to the public, and the staff lavatories.

On the ground floor provision should be made for the Manager's department, consisting of waiting rooms and three private offices, also typists' and correspondence room. A porters' box and messengers' room should be near the entrance.

The space behind the counter reserved for clerks should be as far as possible free from obstruction, should receive good light and be easy of supervision. This space should be provided with book lifts, communicating with the Bank strong room in the basement.

It is assumed that other departments would occupy the upper floors, and lifts and staircases serving these should be provided. These upper floors need not cover the entire area of the Banking Hall if the introduction of top light is thought desirable.

Drawings required—

Plan of Ground Floor

Longitudinal Section

Plan of Ceiling over Main Hall

Scale 8 feet to 1 inch.

Morning Sitting, Monday, 27th June, 1921.

B I.—CONSTRUCTION.

(From 10 a.m. to 1.30 p.m.)

IMPORTANT NOTE.—Candidates who have been relegated in this subject, but not in Design, have already been handed the Question Paper in Subject A (Design), with which it is hoped they will have made themselves familiar.

The designs made by the new Candidates for the Banking Hall will be available for reference, but everything in regard to this Paper must be drawn upon separate sheets.

The first question must be answered by all Candidates, both new and relegated.

1. Draw to a scale of 2 feet to the inch, with rough explanatory sketches to a larger scale, a portion of the cross-section of the Banking Hall set as the subject for Design; this section to extend horizontally through the

front wall on the south side, northwards for about 45 feet, as shown by the line AA on the site plan accompanying the programme for Design, and vertically from the foundations upwards to the level of the first floor over the Banking Hall.

Borings have been taken on the site at a point in the centre of the frontage line on the south side, and the soil is found to be stiff, damp clay for a depth of 11 feet, resting upon a bed of wet gravel 8 feet thick, which in turn rests upon solid blue clay; at a similar point in the centre of the north frontage the clay is 14 feet thick, with gravel and blue clay as before, which gives an inclination of about $2\frac{1}{2}^\circ$ to the surface of the blue clay.

The candidate should show more especially the foundations and the construction of the ceiling and floor over the Banking Hall, with the roof light—if any.

2. A temporary wooden building is to be erected upon level and solid ground, as a Ball Room, internal size 60 feet by 30 feet, height to roof plate 12 feet, an open timber sloping roof (5 feet from plate to ridge), with a lantern-light for half the length, the roof and lantern-light covered with boarding for zinc; boarded floor, made suitable for dancing, timber-framed sides, boarded inside and outside concrete foundation; windows on both sides; doorway at both ends; one end connected by a corridor with an existing building. Draw to scale; 8 feet to an inch, plan and cross-section showing the timber construction. Also draw to scale, $1\frac{1}{2}$ inches to a foot, detail of the roof and lantern-light, with figured scantlings. Indicate the method of giving flexibility to the floor.
3. Draw to scale, 4 feet to an inch, part plan of the zinc covering to the roof, lantern-light, and one end of the building mentioned in Question No. 2 (the previous one). Draw to scale, $1\frac{1}{2}$ inches to a foot, detail section of the joints of the zinc sheets; the zinc work to the flat, the eaves, and cill of the lantern-light and one end of the building; also the main ridge, eaves and outlets to rain-water pipes. State the method of securing the zinc, and the description of zinc intended to be used.
4. Draw to scale, 2 feet to an inch, elevation and section (abbreviated) of the principal entrance doorway of the Bank building mentioned in Question Paper A (Design), assuming it to be constructed with stone and granite. Indicate the joints in the masonry.
5. Draw to scale, 2 feet to an inch, Front and Back Elevations and cross-section of part of the counter (only a length of say 10 feet) and the Cashier's Desk upon the Counter, all made of oak (except the counter front) for the Bank mentioned in the Question Paper A (Design). The front of counter to be designed of marble, the back to have drawers and cupboards for books and papers; the desk to have glazed screen on three sides and a hinged slope. Also draw large scale joinery details of the counter front, the desk, and the folding doors of the cupboards.

Afternoon Sitting, Monday, 27th June, 1921.

B 2.—STEEL CONSTRUCTION AND DEALING WITH DANGEROUS BUILDINGS.

Candidates must not attempt more than four questions, but all candidates are expected to attempt Question 2.

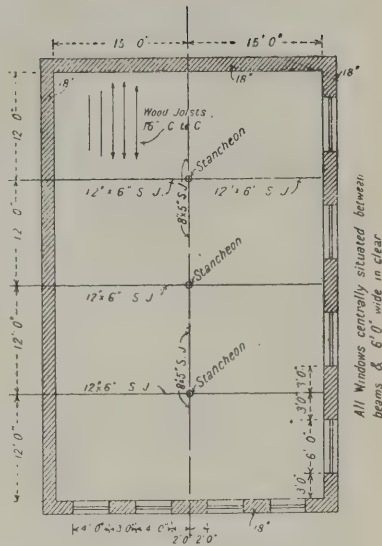
All calculations and rough workings must be shown.

Sketches should be clear and distinct, but finished drawings are not required.

Candidates are referred to the list of Joist Sections at the foot of the paper.

1. Explain in very simple language the meaning of the following terms:—
- (a) Bending moment.
 - (b) Moment of resistance.
 - (c) Section modulus.
 - (d) Moment of inertia.
 - (e) Radius of gyration.
 - (f) Modulus of elasticity.

2. A building of the internal dimensions shown on the plan in margin and consisting of ground and first floors is used as a show-room on the ground floor and as a warehouse for heavy goods on the first floor. The ground floor is 14 feet high from floor to floor. The average distributed load on the first floor is 2 cwt. per foot super.



The first floor is constructed of 9-inch by 3-inch fir joists, 16 inches centre to centre, which rest on 12-inch by 6-inch by 44-lb. steel joists, which themselves rest one end on the wall and the other end on a centre row of steel stanchions of section, 10 inches by 6 inches by 42 lb., as shown on the plan.

The ground floor ceiling is plastered.

The owner is under the impression that the first floor is overloaded, as the plaster ceiling has begun to crack, and he has asked you to examine the structure and report to him.

- Describe as fully as you can the method of your examination of the building;
 - Give details of your calculations showing the safe load which the fir floor joists, the steel joists, and the stanchions will carry;
 - Hence draft a report on the stability of the structure such as you would furnish to your client.
3. After receiving your report your client informs you that he is desirous of doubling the loading on the first floor. Show the measures you would adopt to strengthen the floor accordingly; illustrate your answer by sketches to large scale.
- (Your client insists that no more stanchions shall be inserted on the ground floor, as they obstruct his floor space.)
4. At a later date your client desires to build a basement under the premises and to remove the front wall at ground floor level and to insert a shop front, carrying the wall at first floor level on a steel bressummer resting on stanchions at each end, which latter rest on blue brick piers in the basement. Describe in the proper sequence of events the operations entailed in carrying out the above work. Illustrate your answer with sketches.
5. Draw to a scale of $\frac{1}{4}$ inch to the foot the shoring which you would erect in carrying out the above work. Figure the scantlings of the various timbers.
6. Assuming that the bressummer in Question 5 is composed of two 18-inch by 7-inch R.S.J.s with two 16-inch by $\frac{1}{2}$ -inch plates on each flange, and the stanchions of single

9-inch by 7-inch R.S.J.s, draw to a scale of $1\frac{1}{2}$ inches to the foot the cap and base of the stanchion, showing the connection between the stanchion and the bressummer in the case of the cap.

7. Describe with sketches how you would protect the steel-work in the above building from fire.

LIST OF JOIST SECTIONS.

Section.	Area in square inches.	Greatest moment of inertia.	Least radius of gyration.
8×5	8.24	89	1.11
8×6	10.20	110	1.32
9×4	6.18	81	.82
10×5	8.82	146	1.05
10×6	12.35	211	1.36
12×6	12.94	315	1.31
14×6	13.53	440	1.26
15×6	17.35	629	1.27
16×6	18.23	726	1.22
18×7	22.06	1149	1.46
20×7½	26.17	1670	1.54
24×7½	29.4	2654	1.5

Morning Sitting, Tuesday, 28th June, 1921.

C.—HYGIENE, including DRAINAGE, VENTILATION, HEATING, LIGHTING, and WATER SUPPLY.

(From 10 a.m. to 12.30 p.m.)

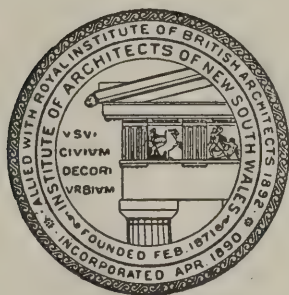
Note.—Not more than five questions to be answered, but either No. 1 or No. 2 must be attempted.

- Draw to $\frac{1}{4}$ -inch scale a plan and section of a small sewage disposal plant suitable for the disposal of the sewage from 24 cottages, with W.C.'s, sinks and baths, in a rural housing scheme. An ample water supply is available.
- Show in outline to 1-16 inch scale the arrangement you would adopt for the foul- and surface-water drainage from the above 24 cottages, the houses being in blocks of 8 cottages each, situated on three sides of an open space used for allotment gardens. No main drainage is available, but a small stream exists about 200 yards from the open end of the square.
- Explain by sketches what you mean by invert, sight rail, septic tank, bacteria bed.
- Give sketches, with brief notes of specification, of various forms of joint in stoneware pipes, also of joints in iron soil pipes and in lead soil pipes.
- Sketch in outline a hospital ward of 24 beds, and show by sketch-section the method of heating and ventilation you would adopt.
- Sketch a typical school class-room for 40 pupils. What space per head should be allowed (superficial and cubical)?
- Give an outline sketch of an electric lighting plant for a small country mansion and state what number, type and candle power of lamps you would use for the principal rooms, viz.:—
 Drawing room .. 20 feet by 30 feet. Dining room same
 Study 14 feet by 15 feet .. size.
 8 bedrooms, averaging 14 feet by 15 feet
 Small hall 14 feet by 20 feet
- Explain the method of water supply adopted in your own town.
 What is meant by (a) artesian well,
 (b) hydraulic ram?
- What is the pressure per square inch due to—
 (a) 10 feet head of water,
 (b) 50 feet head of water?

(To be continued.)

ARCHITECTURE

THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



SEPTEMBER 15TH
1922

VOL 11. No. 9

PRICE ONE SHILLING

MINUTES OF A SPECIAL GENERAL MEETING OF THE INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

Held at the B.M.A. Hall, 32 Elizabeth Street, Sydney, on Wednesday, 2nd August, 1922, at 7.30 p.m.

Mr. G. H. Godsell, President, in the Chair, and full Council, namely, Messrs. B. J. Waterhouse (V.P.), G. Sydney Jones (Ex-P.), R. W. Pickering (Hon. Sec.), H. C. Day (Hon. Assist. Sec.), D. T. Morrow (Hon. Treas.), J. B. Adam, F. Glynn Gilling, S. M. Mould, H. V. Vernon, Professor L. Wilkinson, Messrs. R. Keith Harris and L. C. McCredie. There were present 85 members in addition, making a total of 98, but three members retired before the vote was taken. One Honorary Member also attended.

The notice convening the meeting stated that this Special General Meeting was to be held, firstly, to confirm or rescind the resolution of the Special General Meeting held on 14th July, which resolution read as follows:—

"That this Institute approves of the extension of Martin Place and that it ask the Savings Bank Commissioners to give some consideration in return for the corner site which they will have by this extension."

Secondly, to accept the resignation of the Council.

Apologies were received from Messrs. R. V. Minnett, W. B. Wilshire and Sir. C. Rosenthal.

Mr. A. W. Anderson moved, by permission of the President, and M. J. D. Moore seconded, "That as the time has passed when any action taken by this Institute can have any effect on the proposal to extend Martin Place, no further action be taken in the matter."

Before Mr. Anderson could speak to his motion, three points of order were taken. The first was that the only business to be discussed was that stated on the notice. The second that this confirmatory meeting was not warranted by the Constitution. The third that this meeting was informal because of insufficient notice. The President over-ruled all three.

Mr. Anderson said that the City Council was the one authority that must take the first step before any resumption could take place and the Lord Mayor had expressed his firm determination not to move in the matter at all. It was that morning advertised in the Press that the Savings Bank Commissioners had instructed their Architect to proceed with the erection of the building on the original design. He contended, therefore, that the whole matter had passed beyond the powers of the Institute to render any good service either to the community as a whole or to the Institute.

The meeting evidenced a good deal of feeling as to the propriety of Mr. Anderson's resolution being put to the vote, and at the request of the President it was eventually withdrawn.

The President said that it was apparent from the tone of the meeting that it was determined to proceed with the resolution on the business paper. He would give his Council's reason for its course of action in a statement which had been prepared. He warned his hearers that in trying to force the Martin Place extension through they were backing a "dead 'un."

Mr. C. W. Chambers asked to be informed definitely whether the Council had resigned, and was answered by the Chair in the affirmative.

The Council's Statement.

The one aim which has actuated the members of the present Council during their term of office has been to advance not only the welfare but also the prestige of this Institute and, in taking an active interest in all that concerned the profession and the city, they have devoted their time and the best of their ability to these ends, with the result that the Institute stands to-day in a position it has never held before. The presence of His Excellency the Governor at the Annual Dinner, and the Lord Mayor's attendance at an ordinary general meeting, all testify to the respect with which our Institute is hailed.

Jealous of that position, the Council regards anything which may in any way jeopardise it in the eyes of the public as a calamity, the effects of which would be far-reaching. For prestige, once lost, is with difficulty regained.

It is only a dead organisation which by its inactivity is safe from criticism; a live body must at times act upon its initiative and having acted to the best of its ability, take risk of censure. If that censure be just, there is little to fear provided that all parties are working sincerely for the common good. Crises, frequently arising from apparently insignificant issues, may and will occur, only to be surmounted.

Such a crisis faces the Institute at the present moment and its prestige, the result of many years' work, is threatened.

When the question of extending Martin Place arose about two years ago a Special General Meeting was called, and the consensus of opinion was that the project as proposed was inadvisable; and the matter was

dropped, and, save for occasional references, was apparently dead.

Recently, another attempt was made to re-open the question, and the Council again considered it impartially and to the best of its ability. Its conclusion was that it was inadvisable, and, therefore, not in the interests of the citizens as a whole, and, further, having in mind the result of the decision of the previous general meeting, felt it their duty to support the Lord Mayor in opposing the extension. A deputation was called for 1st June, not one councillor dissenting, nor did any member subsequently approach the Council to express disapprobation; and, consequently, the Council naturally concluded that its opinion received general endorsement.

The first intimation that the Council received to the contrary was a press report showing that one member of Council, without discussing his intention, attended a public meeting in support of the extension, and that one or two other members of the Institute were present. Certain remarks were reported as disparaging to the Council, and, therefore, inimical to the status of the Institute.

The Council has never had the least desire to override the opinions of members and, on the contrary, has always invited criticism; but that criticism should be confined within the walls of the Institute, and not made the subject of newspaper comment.

Notwithstanding the fact that the constitution provides that any five members may demand the calling of a special general meeting, no such action was taken and the Council, of its own accord, with an earnest desire to hear the opinions of any members not in accord with their own, called a general meeting for 14th July to discuss the matter. Various members spoke, and the following resolution was carried by less than a one-fourth majority of those present:—

"That this Institute approves of the extension of Martin Place and that it ask the Savings Bank Commissioners to give some consideration in return for the corner site which they will have by this extension."

Two special meetings of Council were subsequently held, and it was felt that, while the first part of the resolution was regrettable, inasmuch as the opinions expressed at the meeting failed entirely to alter the views held by the Council, the second portion, namely: "That it ask the Savings Bank Commissioners to give some consideration in return for the corner site which they will have by this extension," was ill-advised, and, if carried into effect, must be attended with serious consequences for the prestige of the Institute.

Under these circumstances, feeling, rightly or wrongly, that to comply with this second part of the

resolution would be detrimental to the interests of the Institute and the city alike, the President and Council would consider themselves in honour bound to hand in their resignation; for an executive which did not have the courage of its convictions to do what it conscientiously deemed to be right, would not be fit to lead this Institute.

Although it is realised that change of administration at the present moment may mean the sacrifice of a great deal of much important work for which the Institute and Councils have striven for years, and which at this moment appear on the eve of accomplishment, this sacrifice would have to be made if the price be Honour and Prestige.

While still anxious to do all in its power to advance the position of the Institute, your President and Council cannot submit the name of The Institute of Architects to the indignity of press controversy.

Mr. J. Burcham Clapp moved the confirmation of the resolution of 14th July, as stated on the business paper, and desired that the debate should be carried through on gentlemanly lines without heat or bitterness. But he wanted to know in the first place whether a copy of the said resolution had been forwarded to the Commissioners, and on being told that it had not, he considered that he had been unfairly treated. What was the Council for? What was the Secretary for if not to carry into execution the wishes of the Members? He was not going over the ground covered by his argument on 14th July, but he would say that the Savings Bank Commissioners had been again approached and had promised extended time to the Municipal Council for action on the Martin Place Extension, and so far from backing a "dead 'un," he and those with him were backing a very "livè 'un." He also said that the Extension Party had been well received by the Premier and that something was going to happen shortly. In the statement which had been read they had heard a great deal about "honour" and "prestige," and he and those who saw with him hoped that the President and Council would continue to carry on their good work with honour and prestige and withdraw their resignations, for which there was not the slightest necessity.

Mr. E. R. Green seconded the motion for confirmation.

Mr. Varney Parkes said that there was no necessity for speakers to adduce arguments for or against the extension of Martin Place, because they had been fully considered on the 14th July. The question was whether the resolution of that date should be confirmed or not.

Mr. C. W. Chambers regretted the Council's resignation and hoped that it would be re-considered. It was

true that a mistake might have been made, but everyone was liable to make a mistake and the Institute had every confidence in its President and Council. The debate should be confined to the confirmation or rescission of the resolution under discussion.

Other speakers were Messrs. **A. Lanyon Clark, M. B. Halligan, J. A. Kethel, T. F. Cosh, W. De Putron, R. Louat and B. W. Ford.**

Mr. B. J. Waterhouse said that he had no wish to enter into a controversy with Mr. Clamp, but as his name had been mentioned and as his attendance at a certain meeting had been criticised by that gentleman, he would explain that he attended that particular meeting as a private citizen only to ascertain what was going on and not as a member of the Institute, and he called the attention of the Chairman to his attitude. Mr. Clamp had complained that the Council had not taken members into its confidence, but it must be understood that there must be many things about which a Council would find it impossible to consult its members. The members might be quite confident that the prestige of the Institute and the dignity of their profession (of which Mr. Clamp held himself to be such a shining light) would never be lowered or impaired by the present Council. The resolution carried on the 14th July was not forwarded to the Commissioners for the very simple reason that the Council had the courage of its convictions and could not conscientiously pass it on. This night's meeting was called to confirm or rescind that resolution, but whatever the decision the Council had already resigned and was not prepared to carry on. Every member had the undoubted right to his opinion on any matter, but before associating himself with any public movement which affected the Institute he should consult the Council and not by inadvised action cause friction between the Council and the members. The articles of association specially provided for just such an incident as the present one, viz., five Fellows could request the Council to convene a Special General Meeting. The duty of Mr. Clamp and other members associated with him—he would not mention other names—was therefore clear, but instead of adopting this constitutional course they preferred to take part in deputations, and attach themselves to outside committees, such action being unfair to the Council and derogatory to the dignity and prejudicial to the welfare of the Institute, and tended to jeopardise its position in the eyes of the public as an educational body on civic matters. If such actions were to be permitted it would be impossible for any Council to carry on, and the whole fabric of the Institute would inevitably crumble. He for one was not prepared to continue arduous work for the Institute if such actions were

permitted, and allowed to pass unchallenged by the members.

A division was then taken. Messrs. R. W. Pickering, Hon. Secretary, and the Secretary being the tellers. The result was as follows:—*For the Motion*, 49, namely: *Fellows*: Messrs. C. W. Chambers, J. B. Clamp, J. J. Copeman, T. F. Cosh, W. De Putron, G. W. Durrell, D. Esplin, W. H. Foggitt, B. W. Ford, G. L. Grant, M. B. Halligan, H. T. Hodges, H. O. Jackson, J. E. Justelius, J. A. Kethel, R. Louat, A. Macqueen, J. T. McCarthy, D. T. Morrow, D. Reeves, G. A. Roberts, T. P. Sampson, F. T. Smith, V. G. Steer, J. Vicars, R. M. S. Wells; *Associates*: Messrs. V. D. Cizzio, A. L. Clark, A. C. Fair, G. B. Gray, E. R. Green, L. F. Herbert, S. G. Hurd, G. S. Keesing, G. M. Kenworthy, J. A. Kerr, F. B. Leggatt, C. H. Mackellar, R. M. Mathers, W. M. Mathers, H. E. Parker, F. W. Peplow, E. C. Pitt, R. Prevost, T. M. Scott, A. E. Stafford, D. V. Walford, C. M. Walker, H. C. Waterston. *Against the Motion*, 46, namely:—*Life Fellow*: Mr. G. Sydney Jones; *Fellows*: Messrs. J. S. Adam, A. W. Anderson, H. C. Day, H. Gardiner-Garden, F. G. Gilling, G. H. Godsell, J. W. H. Lake, E. H. E. Lodge, W. Newman, V. Parkes, J. Peddle, R. W. Pickering, P. E. Ranclaud, E. O. M. Rowlinson, A. F. T. Somerville, H. V. Vernon, B. J. Waterhouse, Professor Leslie Wilkinson, Mr. F. Winn; *Associates*: Messrs. O. Backhouse, F. I. A. Bloomfield, O. A. Beattie, H. E. Budden, J. Crust, J. T. Donoghue, A. Douglas-Smith, W. O. England, J. C. Fowell, C. Greenwell, R. Keith Harris, J. N. Hoare, N. L. Jones, A. S. King, L. C. McCredie, J. D. Moore, S. Robertson, R. G. Rutledge, C. C. Ruwald, F. P. Ryan, S. A. Seaton, C. H. Spark, B. Tojkander, C. R. Winter, O. P. Wood, G. Wright.

The Motion was declared to be confirmed.

The President: "The confirmation has been carried in a house of 95 members by a majority of three votes, the figures being 49 to 46. The position of the Council remains unchanged. The Council has resigned. Its period of office has seen so many urgent matters demanding attention that it has become almost impossible at times to carry on one's own business. Still, the time and attention necessary have been given ungrudgingly. When the President and Council took office the Institute's affairs were on a much smaller scale than they are to-day, and its opinions did not bulk as largely as they do now in the eyes of the public. There was no reason why the Members should not appoint a new Council to carry on the business of the Institute harmoniously and successfully, and he sincerely hoped that the pending change would be for the better,

Mr. G. Sydney Jones, speaking as the ex-President, said that he hoped some member would move that the resignation of the President and Council be not accepted. He was in a position to urge such action because he was not an elected but an ex-officio member of the Council. He had seen the Institute grow in a period of 25 years from a membership of 15 to its present splendid position, and never in its history had its affairs been so happily managed as by the present Council. His opinion (and one which would meet with general approval) was that the Bank should be set back so as to allow the extension of Martin Place to be effected at some future time. Surely members might differ from the Council in their views without incurring the risk of the Council's resignation.

Mr. M. B. Halligan moved: "That the resignation of the Council be not accepted and that they be asked to withdraw it."

Mr. J. Burcham Clamp, in friendly contest with Mr. Anderson, claimed and secured precedence in seconding the resolution.

Mr. A. W. Anderson and **Mr. E. R. Green** supported.

Mr. G. Sydney Jones put the motion, which was carried enthusiastically and without dissent.

The President: "I cannot take leave of an office of an Institute of this character without feeling deeply the kindness of tone, thought and expression which have accompanied this unanimous vote. I respect the resolution and will lay it before my Council at an early date and will announce its final decision at the general meeting which is to be held next Tuesday, 8th August. You may be sure that the Institute, which my Council and I love so well, will not be left without an Executive to carry on pending the making of new appointments."

The President declared the meeting closed at 9.45 p.m.

MINUTES OF AN ORDINARY GENERAL MEETING OF THE INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

Held in the Royal Society's Hall, 5 Elizabeth Street, Sydney, on Tuesday, 8th August, 1922, at 7.30 p.m.

Present.

Mr. G. H. Godsell (President) was in the Chair, and there was a large attendance of members and visitors, among the latter being:—Mr. R. Dalrymple Hay, Chief Commissioner Forestry; Mr. N. W. Jolly, Commissioner Forestry; Mr. H. Mortimer, N.S.W. Railway Commissioners; Mr. F. E. Bryant, Union Bank; Mr. R. T. Baker, Technological Museum; Mr. A. T. Black; Mr. P. Burrows, E. D. Pike & Co.; Mr. E. C. Morath, Granton Sawmills; representatives Sydney and Suburban Timber Merchants' Association, Hardwood Sawmillers' Association and Allen Taylor & Co., Pyrmont; Captain Thomas Webb, Huddart Parker Ltd.; Mr. D. Oberg, Davies and Fehon Ltd.; Mr. A. Murray, Alexandria; Mr. C. E. Woodman, Moxon & Co., Ltd.; Mr. A. E. Collins, Windsor; and Mr. W. W. Froggatt, Government Entomologist.

The Notice.

The Notice convening the meeting was read.

Apologies.

Apologies for absence were received from Messrs. Gardiner-Garden, J. Peddle, Kingsley Henderson (President R.V.I.A.), R. W. Pickering (Hon. Sec.), and J. C. R. Mills.

Minutes.

Minutes of Ordinary General Meeting, 11th July; of Special General Meeting, 14th July; and Special General Meeting of 2nd August were taken as read and confirmed.

Invitations.

Invitations by Messrs. Metters Ltd. to visit their works on Wednesday, 16th August, and by the Institute of Surveyors to attend their General Meeting on Tuesday, 22nd August, were noted.

Lecture by Mr. V. B. Trapp on "Australian Timbers."

Mr. Trapp having been introduced by the President, said:

It is quite possible many present may disapprove of certain of my remarks. I wish to emphasise there is no malice on my part, and I trust those present will give me credit for trying to help not only our great timber industry, but forestry, which is the backbone of every country. A country without timber must gradually decline—for instance, Spain. I have fortunately been in close touch with practically all the timber-producing countries. Owing to the interest I have taken

in forestry, I have received many pamphlets demonstrating how forestry and sawmilling should be worked together. Three great factors in a nation's progress are:

1. Its forests;
2. Its timber industry; these two making, or rather helping
3. Farming.

Unfortunately, throughout Australia the sawmiller and the distributor have never been closely associated. I am endeavouring to-night to bring before you the advantages to be gained if the sawmiller and distributor be brought closer together so that each may have a more intimate knowledge of the other's business. The more direct the relations between the sawmiller, the architect, distributor and industries concerned, the more confidence will be inspired and the more pleasant and profitable will business be to all concerned, but to cultivate pleasant and mutually profitable relations between the sawmiller and the distributor, though important, should by no means be our sole or even our primary aim. Both sawmiller and distributor should work together with the common purpose of meeting and satisfying the legitimate demands of our only customers, the building public, including the industrial concerns and their professional advisors, the architects. Some fundamental reforms must be effected before this can be successfully achieved. These reforms lie chiefly within the domain of our friends, the producing sawmillers. Now, what has the producing sawmiller done to raise the standard of our Australian timbers? He has milled in a careless manner, neither selecting, grading nor seasoning, caring little for the future. It is quite possible in the one bush there may be three or more different varieties, all of which are being milled at the same time and delivered together. When these mixed timbers arrive in the cities, they are stacked together and delivered, but the result of their use together is unsatisfactory, and Australian timber is discredited. The sawmiller then abuses the distributor because the timber is rejected.

At a debate in the rooms of the Institute of Architects in Melbourne, one of our leading sawmillers remarked: "I am a sawmiller, and it does not matter to me what is done in the way of selecting, grading, etc.; this lies with the timber merchant in the city, and my responsibility ends when the timber leaves me."

This is a mistaken view, and re-acts unfavourably not only upon the distributor, but still more so upon the sawmiller himself. If the selection and grading of our timber is not done by the sawmiller, who is in the best position to do this important work, it will probably not be done at all, or, if done, will cost far more than it should. Another cogent reason why the sawmiller

should undertake the task of selecting and grading his timber is that such selection is the necessary preliminary to branding, a matter vital to the interests of the individual sawmiller and vital to the permanent reputation and success of the industry. Let the sawmiller send forward timber carefully selected, accurately graded, properly seasoned, and with a quality reliably indicated by a recognised system of branding, and a firmer foundation is laid for success, both individual and collective. The sawmiller will find his overhead expenses reduced, his market expanding, complaints ceasing and profits increasing.

The initial fault is undoubtedly with the sawmiller, and until he alters his methods he cannot expect the architects to specify his timber, nor the public to demand it. It is to be regretted, and one cannot close one's eyes to the fact that there has been a perpetual warfare between the sawmiller and the distributor, or, as he is at times called, the middleman. The sawmiller argues that the distributor is making too much money, but the sawmiller so far has done nothing to mill his timber so that much of the overhead expenses could be reduced, nor has he taken the trouble to grade, select and brand. One sometimes hears it said that it would be better if the producer opened his own distributing yards. Before the sawmiller tries to put other houses in order, first let him improve his own methods, and when this is done, he will find his overhead expenses considerably reduced, and his relations with the distributor entirely satisfactory. With capable scientific handling of the business at the sawmilling end, it may almost be said that the distribution will take care of itself, for the best men in the trade will then be keen on handling the product and extending sales.

The architect also might assist in standardising sizes and lengths for the various buildings; thus the sawmiller could continually produce these sizes and lengths and the distributor keep larger stocks. The result of this would be a greater decreased cost in cutting, and so far as the distributor is concerned, considerable reduction in the cost of handling. With so many different sizes and lengths, the distributor is placed at a disadvantage; he has to hold a larger stock than is necessary. When the sizes and lengths are delivered all mixed, you can well understand the extra cost in carting and stacking.

Price elevation follows in the wake of public confidence when once that has been firmly established. When the public mind has been educated to believe thoroughly in our Australian timbers, and has confidence in them, the prices we shall be able to obtain for our timber, based on honest grades, thoroughly seasoned and well cared for, will certainly be satisfactory.

It is not my intention to weary you with a long description of those of our timbers which have been and are so well and favourably known and appreciated. My aim is to impress upon you that we have many other timbers not less valuable than those which are so favourably known. These are in great supply, but the unfortunate circumstance that in the past they have often been used as firewood, and to some extent still are, has created a general impression that they are unsuitable for either structural or for inside work. The lack of knowledge of its real value is no doubt the reason why so much of our valuable timber has been destroyed.

fully 90% of the total output of timber is softwood, yet hardwood is used for practically all floors, furniture and inside decorations. Out of 970,000,000 feet used annually in the manufacture of furniture, only 55,000,000 feet is softwood. Out of the 55,000,000 feet of softwood, only 250,000 feet is Californian redwood, yet in Australia, the home of the most superior hardwoods, there must be considerably more redwood used in the manufacture of furniture than in America.

I have courteously been allowed to take a number of photos illustrative of the uses of our hardwoods in some of the most important industrial and city buildings. What is more important, those who have given



Royal Victorian Institute of Architects' Committee Room.
Fittings and Furniture made entirely from Northern Tasmanian Hardwood (Oak.)

It is a most extraordinary fact that although Australia is blessed with perhaps the finest range of hardwoods of any country (at least, this is the opinion of Lord Novar and many others), it uses enormous quantities of imported softwoods for floors, furniture, inside decoration, mantelpieces, etc. Some of the common, cheap imported softwood is stained to resemble our timbers. The effect may be tolerable when the furniture is new, but instead of improving as our timbers do, these timbers deteriorate with age. In America

me permission, have also given valuable testimonials regarding the hardwoods used. The photos are here on view. Take, for instance, the Royal Institute of Architects in Victoria. The photos show their Committee Room fitted entirely with Northern Tasmanian hardwood, and their Honour Board, which is of the same material. The floors of H. V. McKay's Sunshine Harvester Works are all made from $4\frac{1}{4} \times \frac{7}{8}$ hardwood. A glance at the photo will show the enormous amount of machinery on the floor, and

according to the testimonial, these floors are good for another twenty years. If hardwood is suitable for a factory such as this, it should be suitable for any floor. It is a timber which is almost perfect for floors of stores, skating rinks and dancing halls.

The photo, with letter received from the Trustees of the Melbourne Exhibition, shows how they appreciate the hardwood floors of that building. Anzac House (see photo) is entirely fitted with hardwood, and has a myrtle floor. There are other photos and testimonials which go to prove the value of these timbers.

Many of you have no doubt read Madame Gene Stratton Porter's works—"The Harvester," "Her Father's Daughter," "Freckles," etc. Most of these books mention timber lands and logging camps. She also wrote an article entitled "No Man Can Love the Home He Rents." In this article the following appears: "A little reminder occasionally of the old carpet-stretcher of the crayfish type which not long ago was used semi-annually with much worry and vexation of spirit, for us to realise the full value of hardwood floors. Hardwood floors and small rugs have done more for the emancipation of slavery amongst house-keepers of the country than any other one thing. When I think of the old days in which a floor had to be scrubbed, covered with paper and big, heavy carpets stretched and nailed on it, carpets which tore and strained a woman almost to pieces in the daily sweep, and that twice each year had to be lifted and taken outside for such a cleaning as would now horrify the neighbours, I am convinced that a hardwood floor and small rugs are one of the greatest blessings modern woman knows."

Every country is trying to seek some plan to reduce the labour in the house. According to Madame Stratton Porter, the greatest boon so far has been hardwood floors, and also the greatest saving.

Hardwood is a great protection against fire. Should a live coal fall on a hardwood floor, it may burn through, but that is about all. On a pine floor in all probability it would mean not only the destruction of the house, but loss of life. Another reason why the City and Municipal Councils should alter their building regulations, is fire protection. Mr. Harrie B. Lee, of the Melbourne Fire Brigades, has repeatedly made the statement that as we have such valuable hardwoods, no softwoods should be allowed within the city boundaries. He maintains that hardwood is a fire preventative and often checks the spread of fire. I have had burning tests prepared at the Engineering School of the Melbourne University.

Hardwood takes—

213% longer to ignite than White Baltic.
235% " " " " Oregon.

320% longer to ignite than N.Z. White Pine.
526% " " " " N.Z. Rimu.

Hardwood takes—

70% longer to burn through than White Baltic.
77% " " " " Oregon.
154% " " " " N.Z. White Pine.
176% " " " " N.Z. Rimu.

Surely this is reason enough for our hardwoods to receive preference, and the City Authorities should insist upon hardwood being used in all large buildings, more especially where a number of people are employed, as it is a safeguard against the spread of fire, and may save many lives.

If further evidence were required to prove the advantages of hardwood over softwood floors, it would be found in the testimonial from the Melbourne Hospital as follows: "In the opinion of the authorities of this Institution, the floor meets all the requirements of a modern hospital, in that it has proved to be sanitary and is of good appearance."

Further testimony is also given by His Honor Mr. Justice Dethridge.

I have brought a number of testimonials to show the advantage and superiority of our hardwoods. When I mention hardwood, it matters little to me where that hardwood comes from, and as most of the States will have almost inexhaustible supplies for hardwood floors, weather-boards, linings, furniture, doors and inside decorations, we should endeavour to use these timbers where possible in place of the inferior imported softwoods.

Let us compare the prices of our hardwood floorings with those of imported softwood. It is commonly said that hardwood floorings cost more than imported softwood floorings. This is one of the statements of a kind most difficult to silence finally, because though it is hopelessly incorrect, it has a superficial appearance of truth, and its falsity is not at once detected because many people do not realise that when comparing articles so different in relative strength and carrying power as hardwoods and softwoods, the comparison of prices of the two for timbers of the same dimensions gives highly misleading results. The representatives of imported timbers will compare $\frac{7}{8}$ in. in hardwood against $\frac{7}{8}$ in. in softwood, which is misleading, as our $\frac{7}{8}$ in. in hardwood has a breaking strain of 2,207 lbs.; $\frac{7}{8}$ in. in red Baltic, 1,129 lbs.; $\frac{7}{8}$ in. in white Baltic, 1,000 lbs.; $\frac{7}{8}$ in. in kauri, 1,121 lbs.; $\frac{7}{8}$ in. in N.Z. white pine, 1,230 lbs.; thus our $\frac{3}{4}$ -in. hardwood, with a breaking strain of 1,630 lbs., is better than red Baltic 1 in. thick; is about equal to white Baltic in $1\frac{1}{8}$ in. It is better than kauri and white pine in 1 in.; therefore if you wish to compare prices, our $\frac{3}{4}$ -in. should be compared with $1\frac{1}{8}$ in. in white Baltic 1 $\frac{1}{16}$ in. in red

Baltic and kauri, and 1 in. in N.Z. white pine. You will notice in the tests made at the Engineering School of the Melbourne University, a footnote giving the information that the Melbourne City Council, and all other City Councils in Victoria, will allow $\frac{3}{4}$ in. in hardwood to be used against $\frac{7}{8}$ in. in softwood, and $\frac{7}{8}$ in. in hardwood against $1\frac{1}{8}$ in. in softwood. I trust other States will follow. New South Wales is the only Australian State which allows N.Z. white pine to be used for floors. Neither the Wellington nor the Auckland City Councils will allow white pine to be used for constructional work within the city boundaries. Again, in my comparison of prices, you must take into consideration the cost of carpets, linoleums, etc. A hardwood floor, even if it costs (which it does not) 50% more than imported softwoods, is really very much cheaper when you take into consideration the saving in carpets, upkeep, etc., and, as already stated, it is more sanitary.

A few words as regards our hardwood scantlings. I have already tried to explain that through want of care on the sawmiller's part (which is putting it mildly), the reputation of our hardwood timber has been injured. Again I will refer you to the tests compiled at the Engineering School of the Melbourne University. You will notice that hardwood, $4 \times 1\frac{1}{2}$, has a breaking strain of 1,850 lbs.; Oregon, 4×2 , breaks at 1,750 lbs. Hardwood, $5 \times 1\frac{1}{2}$, breaks at 3,100 lbs.; and Oregon, 5×2 , breaks at 2,700 lbs.

Had the sawmillers played the game, hardwood would, in very many instances, have taken the place of Oregon, but owing to the careless manner in which hardwood scantlings have been produced, Oregon has been allowed to take the place of hardwood. If the hardwood sawmillers would follow out the suggestions I have made—i.e., to take greater care in their milling, in my opinion they could and would compete successfully with Oregon. In the first place, 4×2 in both hardwood and Oregon is used, yet $4 \times 1\frac{1}{2}$ in hardwood is better in every way than 4×2 in Oregon. If the sawmillers were to get together and determine amongst themselves upon placing their scantlings on the market in a proper condition, the various Municipal Councils, both city and suburban, would certainly allow $4 \times 1\frac{1}{2}$ hardwood to be used, and insist upon 4×2 being used in Oregon. Then again, a 5×2 in hardwood is almost as strong as a 5×3 in Oregon; the relative strengths being 3,800 lbs. and 4,050 lbs.

When you come to deflection it is even more pronounced; for instance, a 5×2 hardwood will only deflect 1.7 inches; a 5×3 Oregon deflects 1.9 inches. If the sawmillers would take a hint from me, they would immediately call meetings in the various districts to try to place their milling on a firmer basis, and when

this is accomplished then approach the City and Municipal Councils to try to have the alterations made. I have pointed out the advantage in floorings; it is just as pronounced in scantlings. Let the sawmiller put his house in order, and, when this has been achieved, there is less fear of foreign competition; but until he does, he is only helping foreign timbers against his own.

Borer.—I have indicated the commercial dangers to our industry which are of our own creation, and against which it is within our power to provide complete safeguards by the exercise of our own systematic care and skill. But there is a serious menace of another order which threatens us from without. I refer to the borer (*Lyctus*) which is imported in bamboo and rattan furniture from Japan, and from America in axe and pick handles. Of late, some of the timber imported contains the borer, and, if allowed to spread, this pest will do irreparable harm to not only the buildings in the city, but to our standing timber. We cannot, unaided, take effective measures to prevent this pest from spreading in our community and eventually attacking our standing timber, but we can enlist the co-operation of the authorities who possess powers of inspection and rejection, and support them, if necessary, against the pressure of adverse interests. So far the imported borer has not attacked our standing timber—at least, it has not been found—but we do not know when it will. Through the importing interests, the unfair statement is constantly heard that Australian timbers have the borer. I give this statement a most emphatic denial; the only borer which does any damage is the imported. Australian hardwoods are absolutely free from this borer provided the timber is cut on the quarter and has no sap. The borer will eat the sap, but it has never been known to touch the heart. In order to make my position of this point secure, I wrote the Premier of Victoria, Hon. H. S. W. Lawson, and have received from him a statement on the authority of the State experts, that no borer has yet been found to attack the heart of our Australian hardwoods. I also wrote the President of the American Forest League asking for information on this point, and, in his reply, he states: "Our native species of *Lyctus* will attack eucalypts, but, as is also the case with some of our native hardwoods, will only infest the seasoned sapwood and not the heartwood. It never attacks the heartwood of eucalypts." He also sent a pamphlet showing how it attacks axe and pick handles, bamboo furniture work, and, what is more surprising, three-ply, but in this he stated: "The core of chestnut doorstock is not attacked, but the oak veneer has been completely riddled with it." Evidently it was thought I made the inquiry concerning the eucalypt, which is now being extensively used in America.

I have already stated it is not my intention to weary you with a long description of those of our timbers which have been and are so well and favourably known and appreciated. I have often been asked which timber I consider the best for furniture, joinery, etc. This is a most difficult question to answer. In Sydney, maple certainly takes pride of place; in Melbourne, our Tasmanian oak and blackwood are in the lead, although maple is now becoming a favourite timber. Many in this room know more about maple than myself, so there is no necessity to give my views, except to say I doubt if there is a finer timber than maple. As usual, when any Australian timber becomes popular, there is always someone who will do all he can to ruin its reputation. This compels me to again mention the borer. It has been stated that Queensland maple is attacked by this pest. There is, of course, a semblance of truth in this, but it is not a fact. Maple, like many other timbers, is **attacked** by the fly—i.e., when the trees are fallen and not milled at once. So soon as the logs are milled this fly dies, but it never penetrates further than the sap. There is no dangerous borer in the maple until it arrives in either Sydney or Melbourne. Then it is liable to be attacked by the *Lyctus* when stacked on the wharves or in the yards. You do not hear any complaints about a foreign maple, which is imported from the Islands, and which is attacked by quite a different borer, which is not seen until the logs are sawn. In some instances it does not make its appearance until the heart is seen, and then it is most pronounced. This insect does not die when the timber is cut, but seems to thrive more in the sawn than in the log. It is a new species, and is causing great alarm to those interested in forestry. I may mention I have sent specimens to America to try to find out if this is the same borer which is doing so much damage to the standing timber in that country.

Then, again, some of the Island timbers have a fungus which cannot be detected. In 1904 the chestnut blight started in America. It has now been definitely decided that this blight came from timber or on timber, whether cases or otherwise, from Japan, China and the Pacific Islands. To-day there is hardly a chestnut tree left. Mr. F. J. Seaver, the Curator of the New York Botanical Gardens, has been conducting some valuable research work. He finds it is now attacking the hickory, red cedar and hemlock.

I can assure those present that maple is not so liable, even to the *Lyctus*, as the Pacific maple. Queensland maple contains no dangerous borer, but the other maple does. Evidently one of your merchants has recognised the importance of trying to prevent the spread of this borer. He has issued a pamphlet in which he states

he has decided to boil all logs before milling. This is not a private firm's work—it is the duty of the Government, and sawn timber, as well as logs, should be boiled.

Silky Oak.—You might call this the Cinderella—no one seems to care for it. It is a splendid timber. There are three different varieties of silky oak. One is worth but little. It is unfortunate that the sawmillers persisted in sending some of this in with the other, and this has given silky oak a bad name, and it will take some time to live this down, yet I do not think the day is far distant when silky oak will be extensively used in all the Southern States.

Queensland Walnut.—Very little is known about this, yet it is one of the most beautifully-grained timbers in Australia. I have seen three-ply made from this walnut equal to, if not better than, Circassian walnut. Australia is no place for this splendid timber—we should send it to the European markets. My impression is that America, in a few years, will be our largest customer for this timber. It was only last week I was asked to inspect some Queensland walnut in one of the yards in Melbourne. It would be impossible to find any walnut to compare with it. It was really fiddleback, and what was not fiddleback was most beautifully figured. If this had been American walnut it would not have been allowed to come to Australia. If it did not come here, it would have been sold at five times the price of Queensland walnut. I would ask you to look with a kindly eye on this timber; but, of course, it is the usual thing—grading, seasoning, branding, and, if this were properly done, you would have another very valuable furniture timber.

Blackwood.—As maple is the favourite timber in Sydney, blackwood is in Victoria and South Australia. There has been more blackwood exported to England, the Continent, South Africa and New Zealand than any other furniture timber. In Sydney, for some reason, this timber has not caught on; it will. The E.S. and A. Bank is a good example of the beauty of this timber. Then I understand (I have not seen it) the furniture in your new Golf House is made from blackwood; this will give you some chance of judging what blackwood is like. In Melbourne, the Banks, including the Savings Banks, and many other public buildings, are fitted with either blackwood or Tasmanian oak, and now, of course, maple is coming into fashion.

There are two other fine timbers in Australia—celery top and Huon pine. Celery top is a timber which borers, white ants, etc., will not touch. A test was made at Port Darwin, the home of the white ant, and by turning to the testimonials you will note the reply of the Government Entomologist. Another

extraordinary fact about celery is that although the timber is heavy when first cut, it becomes very light, but does not shrink—i.e., timber from certain districts. Then, again, it is everlasting. I have a photo of a tennis court at Zeehan made from celery pine which has been down now for over twenty years, and it is as good to-day as when it was first put down. There are two pieces taken from this court, and it would be well for you to inspect; you will then gain an idea of the high quality of celery top. If this were a foreign timber we would be paying, as we are for some of the American timbers which are not as good as celery, from 1/6 to 2/- per foot, and be pleased to get it; but because it is Australian, very little attention has been given to its wonderful qualities.

Huon pine is another exceptional timber. No insect of any sort will live near it. There are testimonials about this. It is everlasting, and good where the drainage is bad. Those who know the value of this timber have the drawers of wardrobes made from it, as no moth will live near Huon pine.

Myrtle.—There is yet another hardwood, which for years was considered of no value—Tasmanian myrtle (*Fagus Cunninghamii*)—a true beech. It is only of late the value of this timber has been acknowledged. You have a photo of the Dunlop Rubber Company showing the floor, also a testimonial. There are specimens from the old Bischoff Mine which have been in use for over forty years; part of a floor taken from a workman's cottage which has been down thirty years; a plank from the Burnie Wharf to prove the lasting qualities of this timber. Myrtle makes a magnificent floor, especially where there is heavy trucking; the grain never rises, and this makes it admirably suitable for floors which have to be constantly washed, or where wool is scoured, the floor being wet one day and dry the next. It is not only suitable for floors and wharf work, but it is a good furniture timber—makes excellent doors and sashes. Then, again, there are many small industries which owe their existence to myrtle. We supply one firm with over 500,000 feet super per year for the manufacture of boot heels. I have brought a few samples so that you can examine them. It was thought we had no timber in Australia suitable for the manufacture of bobbins, yet bobbins made from our myrtle have been proved superior to any imported, and myrtle bobbins are now being extensively used in some of our rope and woollen mills. It is a splendid timber for tool handles, as you will see. Mathieson's Saracen Works in Glasgow speak most highly of it. For floors and sides of sheep and cattle trucks it is an ideal timber, as it is so easily cleaned, and, being everlasting, it never wears out. For this

special work it will last other timbers down certainly twice, if not three times.

There are two kinds of myrtle—red and white. The white is of very little value. Myrtle must be grown on high altitudes; we have found this out by experience. It is for this reason myrtle should be branded so that the consumer will know where the timber comes from. I would ask those present to thoroughly inspect the samples of myrtle and also read the testimonials. Provided it is red myrtle, and grown, as stated, on high altitudes, it is a splendid timber, and for this reason I again repeat it is absolutely necessary that all myrtle should be branded. This is the only security we have against sawmillers who will try to deliver either white myrtle or myrtle grown on swamp lands.

In the early part of this paper I said that from the commercial aspect of the industry the vital member of the trade is the sawmiller, since the success of all subsequent operations depend upon his skill and unceasing and conscientious attention to details of selection, seasoning and grading, but if scientific and absolutely reliable control and attention on the part of the sawmiller constitute the only safe and lasting foundation upon which prosperous business for him and his colleagues who carry on the subsequent essential activities, can be built, it is no less true that the same qualities displayed at the sawmilling stage have a powerful reaction upon the progress and success of forestry.

Many seem to be under the impression that forestry is merely the growing and cutting down of trees for timber; this is not so. Forestry and forest products play a most important part in a nation's welfare. In 1889 Dr. E. J. Janus, in his celebrated work "The National Welfare of a Nation," remarks: "The value of forests is greater than all the metal, coal, petroleum, stone and all the steamboats, vessels, etc., plying in American waters, and belonging to the United States." He complained that practically nothing was being done to cultivate the forests to assist forestry.

Switzerland, two-thirds the size of Tasmania, produces one-third more timber than the whole of Australia, but much of this is used for making charcoal for Italy, which has no coal and very few forests.

The annual cut of timber in Australia is not over 750,000,000 feet. With proper organisation it should increase considerably; it should certainly be as large as that of Switzerland, which annually cuts 1,200,000,000 feet. In my opinion forestry should be a Federal, not a State, matter, and fees and revenue from the forests be applied to forest administration, in re-afforestation, and in experimental work, not only

upon timbers, but also other products—*e.g.*, cotton. With an annual cut of 1,000,000,000 feet, and taking the royalty at 2/- per 100 feet all round, it would mean £1,000,000.

Experimental plantations of timber in drought-stricken areas should also be made. Even if 50% of the money so spent were lost each year, it is not borrowed money; in fact, no money for forestry work should be borrowed—it should be obtained from the royalties; this loss would not matter. In China, in one place where trees have not grown for a thousand years, eucalypts are growing to-day. We should do the same. The planting of trees near a creek or stream, which is ordinarily dry for months in the year, will often add greatly to the period of flow, or even make it perennial. This has been proved in many places in the world. Why not in the drought-stricken areas of Australia?

Where forestry is properly carried on, it will attract many men to the country, which is a nation's backbone. I am looking perhaps a hundred years ahead, when Australia may have to fight to retain her country. If we have men in the country, they are our protection.

It is easy to criticise. Unfortunately, in years gone by (and I regret to state at the present time) large tracts of forest country have been opened for selection without railways first being made. The result has been in some instances the destruction of the timber, which costs perhaps £5 or £6 per acre to clear, to produce land which has been found unsuitable for agriculture. Even if the land were suitable and the railways had been built before the land was opened, the cost of these railways might have been paid out of the carriage of the timber from the forests, or, at all events, be earning money as it was being built. Then, again, the men working at the mills would take up land, as they have done in other countries, work six months on their land, and, by the time the railway is opened, they are on their farms producing.

The steadily expanding use of our timbers throughout Australia should have an important effect in cheapening the sea-carriage, not only of timber, but of many other products. It would also materially add to the revenues of port authorities and bring prestige and prosperity to ports which are to-day of no importance.

Suppose the Inter-State transfers of timber increased by 100,000,000 feet per year above the present figures, the freight at 4/- would be £200,000, but it is quite possible that within twelve to fifteen years the increase would be 500,000,000 feet. This would mean £1,000,000 in freight per year paid to the vessels owned and managed in Australia. I want you all to recognise this most important fact, that the cities are

merely the clearing-houses for the country. It is for us to try for the sake of future generations, to open up the country, but, as it is, the cities are being boosted up at the expense of the country.

Discussion.

An interesting discussion followed, in which Messrs. S. M. Mould, G. S. Keesing, B. J. Waterhouse (Members), Messrs. A. T. Black, W. W. Froggatt, R. T. Baker, A. E. Collins, W. Langley (Visitors) took part.

Vote of Thanks.

A vote of thanks to Mr. Trapp was proposed by Professor Leslie Wilkinson, seconded by Mr. J. A. Kethel, put by the President in a few happy words, and carried by acclamation.

The Council's Decision.

Consequent upon the vote at the Special General Meeting of 2nd August, the President made the following announcement:

"The Council has decided to continue in office and carry on the work of the Institute until the election in February next."

"As the outcome of the last Special General Meeting, the resolution then confirmed will now be dealt with by the Council in accordance with the terms of the resolution."

The resolution reads as follows:

"That this Institute approves of the extension of Martin Place, and that it ask the Savings Bank Commissioners to give some consideration in return for the corner site which they will have by this extension."

INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES.

Intending applicants for admission are notified that the examination qualifying for candidature as Associate to this Institute in 1924 and thenceforward will be the equivalent of the final F.R.I.B.A., and that registration, firstly, as Probationer by submitting evidence as to education, and secondly, as Student, by passing the Intermediate Examination, will be necessary preliminaries.

Candidates can qualify for entrance as Associate at the 1923 Examination for the last time by passing an examination equivalent to the R.I.B.A. Intermediate without registration as Probationer.

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
N. S. War Memorial ...	—	Approved.
Port Said Memorial ...	31/3/23	Approved
Launceston War Memorial	1/11/22	Approved

ARCHITECTS ACT, 1921

This Act was proclaimed as coming into force on 1st August, and the members of the first Board—Professor Wilkinson, Messrs. G. H. Godsell, A. S. Hook, B. Hadley, W. Martin, J. Nangle, J. Sulman and R. M. S. Wells—were received on Monday, 14th August, by the Minister for Education, the Hon. A. Bruntnell, who will administer the Act. The Board immediately held a preliminary meeting, elected Mr. Godsell as President, and arranged to consider draft regulations. They hope to finalise them before the end of September. When that is done the Governor has to approve of them, necessitating action at two meetings of the Executive Council before they can be gazetted. This it is anticipated will be done by the end of October. The Board are pressing forward with the machinery for applying the provisions of the Act, but will not be in a position to receive and deal with applications for registration earlier than the beginning of November. At this initial stage members of the profession will only hamper the work by lodging applications before the regulations take effect and are available for issue. When the Board is in a position to deal with applications full information on the subject will be given in the public Press as well as in our Journal. The Registrar is Mr. E. Williams, and the office of the Board is at the Education Department, Bridge Street, Sydney.

* * *

The First President.

At the inaugural meeting of the Architects' Registration Board, appointed under the Architects Act passed last year, Mr. G. H. Godsell, President of the Institute of Architects, was unanimously appointed President. He now holds the position of President of the Institute of Architects of New South Wales, Presi-

dent of the Federal Institute, and President of the Architects' Registration Board.



Mr. G. H. Godsell.

A VISIT TO MESSRS. METTERS LTD., FACTORY AT ALEXANDRIA

Messrs. Metters, Ltd., invited the members of the Institute to pay a visit to their works on Wednesday, 16th August, and a small party of ten availed themselves of the opportunity. The party comprised Messrs. H. C. Day (Assistant Hon. Secretary), H. O. Jackson and Sir Charles Rosenthal (Fellows), with Messrs. A. Lanyon Clark, W. Osbourne England, H. A. Maclean, A. H. Martin, Struan Robertson, B. Tojkander, E. B. Wilshire (Associates), and Mr. John J. Lough (Official Secretary). The visitors were met

at Martin Place at 2 p.m. by Mr. H. L. Spring (Managing Director), who motored them thence to Alexandria, and there they were received and escorted over the works by Messrs. R. A. Spring and E. A. Fuge (Directors), F. C. Brown (Works Manager) and J. H. Drabble.

The visitors spent a very interesting time in inspecting the works, and before leaving, Mr. H. C. Day and Sir Charles Rosenthal expressed the thanks of the Institute for their reception, and said that the extent of

the Metters Industry and the ramifications of manufacture in stoves, ranges, windmills, baths, kitchen utensils and equipments and sanitary fittings were eye-openers to them. Years ago clients were advised to purchase imported articles, but the excellence of the articles turned out by the Metters Works in such perfect style warranted preference now being given to the home productions. Congratulations upon what had been accomplished and happy predictions for the future brought a suitable reply from the Manager, and the visitors were motored back to town by 5 o'clock p.m.

The following is a description of the works as supplied by the firm:

Metters, Ltd., are the largest ironfounders in Australia. The firm was established in 1890 at Adelaide, where they have large works, employing 200 hands. Works were also established at Perth, W.A., in 1893, which employ 150 hands, and at Sydney in 1902.

These works at Alexandria, Sydney, cover ten acres of ground, the total extent of the land being sixteen

acres; and employ some 900 hands. They have also extensive Show Rooms and Offices opposite Mark Foy's in Elizabeth Street, City, where their various specialties can be inspected, and where demonstrations are given in the practical working of same.

Their special lines of manufacture include the well-known "Early Kooka" Gas Stoves, and gas and fuel fires. They are the largest makers of highest grade porcelain enamelled bath and sanitary ware in Australia, and have recently put down plant and started to manufacture stamped steel enamelled hollow-ware of the finest quality. They also specialise in cooking plants suitable for hotels and large institutions, as well as enamelled acid pans and plant for chemical and other purposes.

The foundry casts anything up to 50 tons of light castings per day—the fineness of the finish being a special feature. The quality of their goods loses nothing by comparison with, and they are the nearest approach to, Home casting of any made in this country.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

PRIZES AND STUDENTSHIPS.

Prizes to be awarded in January, 1923.

PAGE

- 5 The Royal Institute Silver Medal and 25 guineas, for Essays.
- 6 The Royal Institute Silver Medal and £50, for Measured Drawings.
- 7 The Pugin Travelling Studentship: a Silver Medal and £75, for travel in Great Britain and Ireland, and study of Mediæval buildings.
- 10 The Godwin Bursary and Wimperis Bequest: a Silver Medal and £130, for travel outside Great Britain and Ireland, and study of modern architecture abroad.
- 12 The Owen Jones Travelling Studentship: a Certificate and £100, for the study of ornament and colour decoration.
- 16 The Tite Prize: a Certificate for Design according to the methods of Palladio, Vignola, Wren or Chambers, and £100 for travel and study in Italy.
- 18 The Henry Saxon Snell Prize and £50
- 19 The Henry Jarvis Travelling Studentship: £250, at the British School at Rome.
- 22 Henry Jarvis Travelling Studentships at the "Recognised Schools."
- 23 The Grissell Gold Medal and £50, for Design and Construction.
- 24 The Arthur Cates Prize: £30.

- 27 The Ashpitel Prize: £10 (in books).

Prizes to be awarded in January, 1924.

- 5 The Royal Institute Silver Medal and 25 guineas, for Essays.
- *The Soane Medallion for design and £150, for Continental travel and study of ancient buildings abroad.
- 7 The Pugin Travelling Studentship: a Silver Medal and £75, for travel in Great Britain and Ireland, and study of Mediæval buildings.
- 12 The Owen Jones Travelling Studentship: a Certificate and £100, for the study of ornament and colour decoration.
- 19 The Henry Jarvis Travelling Studentship: £250, at the British School at Rome.
- 22 Henry Jarvis Travelling Studentships at the "Recognised Schools."
- 23 The Grissell Gold Medal and £50, for Design and Construction.
- 24 The Arthur Cates Prize: £30.
- 27 The Ashpitel Prize: £10 (in books).

The attention of Students is expressly called to the undertaking required, that designs and drawings are wholly the work of the competitor himself.

If any Prize is not awarded it will be offered for competition in the following year.

* Particulars of this prize will be published next year. The R.I.B.A. booklet containing detailed information can be seen on application to the Secretary, I.A., N.S.W., at 5 Elizabeth Street, Sydney.

SIR BANISTER FLETCHER'S "HISTORY OF ARCHITECTURE"

The publishers (Messrs. B. T. Batsford) have forwarded to the library the *History of Architecture on the Comparative Method*, by Sir Banister Fletcher (6th edition, 1921).

This volume covers an extensive field from Ancient Egypt to Modern America, and is a veritable *multum in parvo*.

The author, in dealing with cause and effect in respect of architectural development, and in contrasting

one period with another, has provided a substantial groundwork upon which the student may build his further studies. Even those familiar with previous editions will find much new matter of interest in this latest edition which has been entirely re-written and is copiously illustrated with about Three thousand five hundred illustrations.

It is a welcome addition to the library of The Institute, and should prove of great value both to students and members.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THE EXAMINATIONS. QUESTIONS SET AT THE INTERMEDIATE AND FINAL (OR SPECIAL), JUNE, 1922. THE INTERMEDIATE EXAMINATIONS.

For Registration as Student R.I.B.A.

(Continued from August Issue.)

Afternoon Sitting, Tuesday, 28th June, 1921.

D.—THE PROPERTIES AND USES OF BUILDING MATERIALS.

(From 1.30 to 4 p.m.)

Not more than six questions are to be attempted.

1. In forming a raft foundation on the side of a river specify the materials you would employ, the form in which you would use them, and the qualities of each material and the tests you apply in their selection.
2. Give in a tabular form a comparison between bricks and concrete blocks arranged in order of strength, and the purposes for which each is best suited and the tests you apply to each material.
3. What is trass and how is it employed? How do you measure the voids in aggregates and what loss in bulk takes place when concrete is mixed?
4. State what you know about the following building stones: Portland, Bath, Beer, Hopton Wood, Robin Hood, Mansfield. Give the tests you apply in the selection of each kind. What are the advantages of tensile tests and how are they applied?
5. Give a list of timbers usually specified for carcasing, flooring, joinery and decorative purposes, and the timber of equal quality that could be substituted in each case in the event of the first timber specified not being obtainable.
6. Give a list of the ingredients of paints and the defects of each material and the means you employ to detect their defects and the special purposes each kind of paint is best suited for.
7. Give a list of the non-ferrous metals used in buildings and the purposes for which each is best suited, the defects each is liable to, and the methods you employ to detect these defects.
8. Give in a tabular form the various kinds of fire-resisting floors and partitions used in building and the defects each is liable to.

Afternoon Sitting, Tuesday, 28th June, 1921.

E.—SPECIFICATIONS, BUILDING CONTRACTS, AND THE ORDINARY PRACTICE OF ARCHITECTURE.

(From 4 to 5.30 p.m.)

Note.—The Candidate is not to attempt more than five questions, of which at least two must be in Part B.

A.

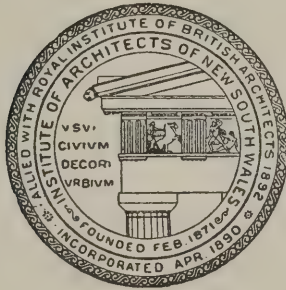
1. Specify in all trades the work and materials required in the construction of a flat roof to a factory building, 100 feet long by 20 feet wide, the flat to be of steel and concrete construction, covered externally with asphalt and plastered on the soffit. The flat roof to have parapets on three sides and an iron eaves gutter on the fourth side.
2. Specify and illustrate with sketches how you would construct the outer walls of a cottage proposed to be weather boarded on the outside, and yet to be warm and quite weatherproof.
3. Specify and illustrate with sketches the detail and construction of a pair of hardwood French casement windows, opening outwards, showing the meeting and hanging stiles, cill and head, etc., to be draughtproof and watertight.
4. Specify and illustrate by careful sketches a stack of soil pipes to a public building with four W.C.s one above the other, showing sections through the closets, and soil pipe and drain junctions. Give the sizes of all pipes.
5. Specify the work required in covering a lead flat 25 feet long by 13 feet wide, having an outlet at one end, a parapet wall around three sides, and a sloping roof finishing on the flat on the fourth side.

B.

1. Give a *précis* of the principal clauses of a building contract.
2. The building owner of a house in London has served a Party Wall Notice on the adjoining owner that it is proposed to rebuild the building owner's house. Describe the procedure that should be taken to safeguard the adjoining owner's interests.
3. Dry rot has become evident in a wall of a house, in the skirtings, panelled linings to the windows and doors, and, upon examination, in the ends of the joists, etc. What steps would you take to eradicate the trouble?
4. Discuss the advisability of making quantities form part of a building contract.

ARCHITECTURE

THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



OCTOBER 16TH
1922

VOL 11. No. 10

PRICE ONE SHILLING

MINUTES OF AN ORDINARY GENERAL MEETING OF THE INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

Held at the Royal Society's House, 5 Elizabeth St., Sydney, on Tuesday, 12 Sept., 1922 at 8 p.m.

Present.

Mr. R. W. Pickering (Hon. Secretary) took the chair at the opening of the meeting. Mr. G. H. Godsell (President) presided later, and about sixty members and visitors attended.

Apologies for absence were tendered by Professor Wilkinson, Messrs. B. J. Waterhouse, R. G. Craig, H. V. Vernon and Allen W. Gerard.

Minutes.

The Minutes of the Ordinary General Meeting of 8th August, 1922, were taken as read and confirmed.

Election.

A ballot was taken for the election of Messrs. Charles Euston Bridekirk, Edward Robert Hickson Merewether, and Nigel Bronte Pitt as Fellows. The Scrutineers were Messrs. W. Newman and J. J. Cope-man. Fifty-nine ballot papers were opened and all the candidates were declared elected.

Lecture.

Mr. W. W. Froggatt, F.L.S., F.E.S., Government Entomologist, delivered the following lecture upon the

TIMBER BORING BEETLES.

The study of forest insects is such an important branch of economic entomology that in the countries where the value of forest entomology is understood and investigated, such as Canada, India and the United States, the Bureaux of Forestry, or Forestry Commissioners have one or more specially trained entomologists devoting the whole of their energies to the study and control of forest insects.

Forest entomology should be studied at first hand in the forests, at the lumber camps and sawmills, and finally at the timber yards. While trees are growing under natural conditions, in suitable soil in the forest, they are not usually attacked by borer beetles, but may be subject to foliage eating pests belonging to several orders of insects, which may defoliate large areas, but under normal conditions they soon recover.

When, however, a tree is injured in any way through forest fires, storms, local injury to the bark, twigs, or roots, it naturally becomes unhealthy; the bark begins to wither, then all the timber beetles in the forest are attracted by the subtle scent of the stagnant sap and tissue, and come to feed and lay their eggs upon or in its bark. Nature works in this manner; she has no use for a sick tree, and the action of the wood-eating insects in the course of time reduce the dead tree to vegetable

mould and it returns to mother earth. In the same manner the termites (popularly known as "white ants") in a much more rapid manner deal with all dead wood they come across in their underground wanderings.

The death of trees is often attributed to insects found upon them, when they are really only the secondary symptoms, and are simply present because the trees are dying or in an unhealthy state. Let anyone camp in our sub-tropical cedar brushes or forest scrubs and cut poles for his tent, and within 24 hours he will find numbers of little wood-boring beetles on the withered bark on the poles. When a grass fire runs through a scrub or along a river forest, the collector will usually reap a rich harvest of weevil and longicorn beetles when hunting over the scorched stems and branchlets.

In the great forests of Northern Europe, where the district rangers know every tree under their protection, as soon as a tree shows signs of decay or injury, it is cut down, barked and removed from the forest, before it can become a centre of infection for the surrounding timber.

The wood-boring beetles can be divided up into a number of distinct groups, and the damage caused by each of these groups can be distinguished by the trained entomologist without actually seeing the perfect insect.

The Longicorn beetles (*Prionidae* and *Cerambycidae*) are a very important group of the Coleoptera, often remarkable for their size, and always furnished with long slender antennae. Though the adult beetles usually feed upon the green bark of the tree, they deposit their eggs in the bark of their food plant, and the larvae feed under the bark in the branchlets in the sap-wood, and finally in the heart-wood, where they cause most of the damage.

These beetle larvae are often in the sawn timber when it is cut up for building, and may develop into the perfect beetle, and bore their way out several years after the building has been completed. We have a number of specimens, chiefly from pine floors, in our departmental collection, which have been sent in by correspondents who have found them in the rooms where they have emerged through the linoleum, to the surprise of the housewife. Some weevil beetles (*Curculionidae*) and round-headed borer beetles (*Buprestidae*) have the same habit. The damage generally

caused by these beetles is simply the single gallery or burrow in the board.

The forest flora of Australia is so distinct from that of all other parts of the world that we also find the insect fauna just as remarkable and distinct. In the great family *Myrtaceae*, containing the Genus *Eucalyptus*, are found the majority of our hardwood timber trees, popularly known as "Spotted Gum," "Tallow Wood," "Blackbutt," "Stringybark," and many other names. Then there are the coastal pines of the Genus *Aracaura*, known as the Norfolk Island Pine, Hoop Pine or Maryborough Pine, and the Bunya Bunya Pine. In the western scrubs we have large areas covered with our Desert Cypress, belonging to the Genus *Callitris*, each of which have their own insect fauna.

In the Cedar brushes, or coastal scrubs, we have a much more varied growth of timber trees, of which the Red Cedar, once ranging from near Sydney northwards to India, is the most valuable. Other timbers in our New South Wales scrubs, used chiefly for furniture, are the Beech (*Trochocarpa laurina*), Blackwood (*Acacia melanoxylon*), Corkwood (*Schizomeria ovata*), Sassafras (*Doryphora sassafras*), and Coachwood (*Ceratopetalum apetalum*), while Queensland Maple comes from the north.

The following groups may be defined:—

FAMILY SCOLYTIDAE.

The first four groups leave the timber after the larvae have developed into the perfect beetles.

The last two groups reinfest the timber, year after year, until it is reduced to dust.

Bark Beetles, chiefly confined to the great pine forests of Europe and North America, forming complicated galleries under or in the bark.

The Ambrosia Beetles, that infest all kinds of forest trees; others infest fruit and cultivated trees and form circular galleries and radiating galleries in the wood.

Shot Hole Borers, infesting all kinds of timbers and frequently forming direct straight bores through the timber.

FAMILY BOSTRYCHIDAE.

Auger Beetles, infesting both hard and soft woods, boring straight galleries through the timber, usually only attacking dead dry timber.

FAMILY PTINIDAE.

Anobium or Furniture Beetles.—Beetles infesting all kinds of dry timber, commonest in Australia in pine floors, reducing it to a honeycomb of wood packed with wood dust.

FAMILY CIOIDAE.

Powder Post Beetles.—Beetles attacking the sapwood of our hardwood trees and reducing it to dust through constant re-infestation.

The Bark Beetles.—In the European and North American pine forests these beetles cause an immense amount of damage, the adult beetles working beneath the bark and destroying the trees. They are also known as Shot Hole Borers and Ambrosia Beetles. They belong to the great Family *Scolytidae*. They are all small black or reddish brown beetles, short and somewhat cylindrical in form, with small broad heads furnished with clubbed antennae, and the prothorax is large and rounded. The beetles bore into, and under the bark or into the timber, usually forming one or more parallel galleries and laying their eggs at intervals along the sides of these galleries, the baby larvae either gnawing out lateral chambers from the main gallery or feeding upon the exuding coagulated sap on the inner surface of the galleries, from which some species take the popular name of Ambrosia Beetles.

Scolytus (Eccoptogaster) Rugulosus is known as the Shot Hole Borer of the United States. It attacks perfectly healthy, as well as sickly, cherry and plum trees.

Scolytus destructor is the Elm tree bark beetle.

The members of the Genus *Tomicus* are typical pine bark beetles, and *Tomicus typographicus* is the common European species that forms the remarkable scroll-like designs on the inner surface of the bark of the Spruce pines, from which it takes its name of *Typographicus*.

Hylurus pineperda is another very destructive pine beetle in Europe, which bores into the stems of the Scotch pines.

The Genus *Xyleborus* is represented in Australia. *Xyleborus dispar* bores a circular hole into the stem of the oak and eats out lateral galleries; they also attack fruit trees in Great Britain.

Our common Ambrosia beetle, *Xyleborus solidus*, has on several occasions done a considerable amount of damage to apple trees in the Gosford district, but I suspect that the trees infested were in an unhealthy condition, or badly cultivated. This beetle enters on the side of the branch and cuts a gallery right round beneath the bark, forming a chamber in the centre where the eggs are deposited; later on these branches snap off and fall to the ground. They should be gathered up and burnt.

From our timber merchants' point of view, the members of the Genus *Platypus*, which are typical Shot Hole Borers, are among the most important of the family when attacking fallen timber left to season in the forest. The common Shot Hole Borer in Australia (*Platypus omnivorus*) was originally described by Lea, from Tasmania, without any account of its

life history. In working out, the Shot Hole Borers infesting the timbers from our coastal brushes, which are cut for making furniture, I found that this species was the common one in New South Wales responsible for most of this damage. These beetles bore into the timber after it is fallen in the forest, or come into the sawmill yards and bore into the drying timber in the log after it is cut, laying their eggs in the ends of the burrows, the larvae feeding upon the sap. When the timber is thoroughly seasoned, the damage ends, and the beetles fly away or die, leaving a number of fine pin holes scattered over the boards. It infests the brush timbers previously mentioned. During my investigation I found that if carbolised sawdust was sprinkled under the timber and through the boards as they were stacked to dry, that they were protected from the Shot Hole Borer.

Platypus corpulentus is a native of the Malay Archipelago, one of several other undetermined Shot Hole Borers that is very plentiful in the timber known as Pacific maple, which is imported from Java and Borneo. It is the species that has been written up in our newspapers as a serious damage to houses, native trees, etc., but like other members of the genus will certainly not attack well-seasoned timber. If the logs were barked and treated before they were stripped from the East there should not be much difficulty in importing this timber into the State without these beetle borers.

The Family Bostrychidae (Auger Beetles).—The members of this family are well-named "Auger Beetles," on account of sharp clean-cut bores they make into the trunks and branches of dead trees. They are large cylindrical black beetles, with the prothorax segment forming a regular cowl, covering the head, which is rounded and turned downward, the last three segments of the antennae forming a well-defined club.

The large Auger Beetle (*Bostrychopsis jesuita*) is a shining black cylindrical insect, about half an inch in length. It is found upon freshly fallen forest trees and in the dry west feeds and hollows out the whole of the interior of the stems of dead orange trees.

Bostrychus cylindricus is a smaller dark chestnut brown beetle, measuring about one-third of an inch in length. The thorax and body are cylindrical, and the wing covers are ribbed and deeply punctured. It has been recorded on several occasions as damaging wine casks when left outside the wine cellars by cutting holes right through the staves.

Several members of the Genus *Rhizopertha* and the Genus *Apate* are found boring in dead timber. *Apate collaris* measures about one-quarter of an inch in length

and has a dull yellow thorax and dark brown wing covers spined at the tips.

Xylothrips gibbicollis is remarkable from its habit of boring through the lead sheathing used to protect the overhead telephone wires in Sydney. There have been quite a number of these perforations of the lead traced to the presence of this tiny beetle. The perforation permits the moisture to enter the cable and destroy the insulation of the wires, so that it is a serious pest to the Telegraph Department. There seems no valid reason for this beetle to desert his timber for lead, except idle curiosity to find out what is behind the lead.

Rhizopertha dominica (the Stored Wheat Borer).—This beetle was originally a wood-boring beetle, but living in the timber made into receptacles for holding grain or foodstuffs, it turned its attention to the contents and thus became a grain insect. Originally a native of India, it has spread all over the world. During the years we were accumulating our great stacks of wheat at Enfield, this little beetle appeared in immense numbers and destroyed a large quantity of wheat.

The Anobiums or Furniture Beetles.—There are three well-known wood-boring beetles that until recently were included in the Genus *Anobium*, but are now placed in different genera, two of which are cosmopolitan insects common in Australia. The first, *Sitodrepa* (*Anobium*) *punicum*, which is known in the United States as the "Drug Store Beetle," on account of its being found feeding on so many different kinds of stored drugs, is just as omnivorous in its food as it is cosmopolitan in its distribution. Though it is not a consistent wood-borer, it can thrive on all kinds of strange food supplies, eats horn, clothes, all kinds of stored foods, and has been found perforating sheet lead.

The "Death Watch," *Xystobium* (*Anobium*) *tesselatum*, is probably the best-known species, on account of the superstition that its "tapping" on the woodwork of the house or old furniture portends the death of the sick person who hears it in the silent watches of the night.

These beetles feed in oak, beech, sycamore and other timbers in old houses. In reference to the manner in which "Death Watch" makes the dreaded sound, Gahan says: "The beetle jerks its body forward seven or eight times in rapid succession, and strikes each time with the lower part of its head against the surface on which it happens to be standing, giving eight taps in less than a second of time."

The "Death Watch" seldom attacks movable furniture, but is very destructive at times in old buildings

in which oak or chestnut has been used for fittings. It was this beetle that some years ago did the extensive damage to the old oak rafters and beams in the roof of the Westminster Hall.

The common Furniture Beetle (*Anobium striatus*), also known under the name De Geer gave it, *Anobium punctatum* is the furniture pest in England, but here, in Australia, is the common pine beetle, attacking the pine floors, and where abundant honey-combing the whole board until it is simply a network of fine galleries packed with fine wood dust. It is most common in the hoop pine and other of our kauri pines, and will remain feeding in timber of this kind for years. During the last ten years it seems to be increasing in its depredations.

Variable in size, it measures up to one-fifth of an inch in length, and though the ground colour is reddish to dark brown, it is so finely coated with yellowish grey hairs so that it has a uniform greyish brown tint. The general form is boat-shaped, with the wing covers turning down. When at rest the head can be retracted and tucked in under the prothorax, with the clubbed antennae folded up on the sides.

The Powder Post Beetles (Genus *Lyctus*).—The members of this group of timber beetles are cosmopolitan, and in England are frequently called Furniture Beetles. At one time a good deal of the rattan furniture coming from China and Japan was infested with a *Lyctus*, probably the small species *Lyctus costatus*. Our ordinary furniture, made of well-seasoned wood, does not seem to be affected.

The Powder Post Beetle (*Lyctus brunneus*) has come into a great prominence, particularly during the last few years, owing to the unrestricted use of unseasoned sapwood of our various hardwoods (*Eucalyptus*), which in the old days was cut off the logs as waste and burnt by the saw-millers. As much of this inferior hardwood has been cut into roof battens, which are all sapwood, there is a very serious problem regarding the stability of our roofs to be considered at no very distant date.

All our experience shows the beetles lay their eggs in the sapwood of the trunks of a number of our hardwoods, such as spotted gum, tallow wood, stringy bark, etc. They do not infest, or enter, the solid heartwood of these timbers, and they do not infest any of our soft native woods.

This beetle is variable in size, averaging about one-fifth of an inch in length, and is of a general uniform reddish brown colour, somewhat elongate in form, with a narrow head, large projecting eyes, and slender antennae clubbed at the tips. When fully developed, the perfect beetles emerge by cutting their way out, and after a short life die; but the females deposit their

eggs in the bores and the small white grubs continue to feed until the whole of the sapwood becomes dust.

The application of kerosene or creosote oils to the infested sapwood, if made in time, will check the ravages of the larvae and beetles, killing them by contact. The more oil that can be forced into the wood the more effective will be the application.

Suggestions and Conclusions.

In the forest the chief methods adopted under scientific forestry is to see that all damaged sick trees and dead trees or fallen timber is cut up and removed from the forest area. In the old world it is either carted out and sold for firewood or turned into charcoal in the forest by charcoal burners. All marketable timber, after it is fallen, if not immediately removed, should be stripped of its bark and, where practicable, sprayed with some deterrent oil, creosote or carbolic emulsion, which keeps the forest borers from laying their eggs on the logs. The clearing up of all fallen timber, lopped branches, not only checks the breeding and spread of borers, but is one of the most important in checking the spread of forest fires.

In the timber yards, and sawmills all timber suspected to contain borers or white ants should not be stacked with sound seasoned timber, and waste useless timber should not be allowed to accumulate.

With regard to the danger of importing wood-boring insect pests from adjacent States, the Pacific Islands, and other parts of the world, it is a very difficult matter to have an efficient inspection without hampering trade. We know pretty well that European and American softwoods are comparatively safe, therefore we should concentrate on the Island timbers and those from the East, the nature and names of many of which are unknown and which may contain wood-borers that might become serious pests in our native forests. There will, in the near future, be a very large trade in valuable tropical timbers from the Solomon Islands and New Guinea, as well as from Borneo, Java and other parts of the Malay Archipelago, and it is here that an efficient economic entomologist will be required. If a protective treatment of the timber is carried out in the forest or port of shipment, and a careful inspection at the port of entry, we should be able to obtain large supplies of valuable timber with very little risk of introducing dangerous pests that may become established in the Commonwealth.

Discussion.

Messrs. A. F. T. Somerville, F. Glynn Gilling, J. J. Copeman, N. L. Jones, P. J. Drew, A. Howie, R. T. Baker, W. L. Wearne, L. S. Cumming, F. E. Bartholomew, and H. C. Day took part in the discussion which followed.

Mr. R. T. Baker.

Mr. R. T. Baker (formerly Curator Technological Museum) spoke in complimentary terms of Mr Froggatt's lecture, and of the monumental work he had done in the field of Australian entomology—a section of science which is now so largely increasing our knowledge of the friends and foes of the insect world in relation to the development of the various branches of our industrial life. He also emphasised the fact that, taken as a whole, our Australian timbers are remarkably immune from borers, and that whilst Northern Hemisphere timbers, such as oak, beech, elm, etc., as shown by the lecturer, have each their timber pests, yet it is only in a very few cases that the heartwood of Australian timbers is attacked, and then almost exclusively by the "Shot Hole Borer," which, after all, is not so very serious. The bulk of our hardwoods are obtained from the Eucalypts, which number over 200 species, and with the exception of red mahogany, blackbutt, and a few others, it is the exception to find "shot hole" affected specimens. As proof that this borer is not a very serious detriment to our timbers he stated that specimens of red mahogany taken from the Girls' High School, that is now being demolished, was still in good condition and sound, although it had been in the building for 100 years; nor was the "Powder Post Borer" found in any timber taken from that structure. From these two instances, and his own experience with Australian woods for over 30 years, he considered that we Australians should not make too much out of the rare appearance of the former pest at least, for nothing is gained by giving our timbers a bad name, and, as he maintained, they do not deserve it, for without doubt in them we possess some of the finest timbers in the world for rapidity of growth, durability, hardness and other good qualities. The "Powder Post Borer" only attacks the sapwood of half a dozen Eucalypts, so the best advice in this connection is—don't use the sapwood.

Mr. W. L. Wearne.

Mr. W. L. Wearne (Wallis Bros. Ltd.) said that during the early years of the war his firm noticed that the timber coming from Queensland was becoming much more infected with borer; in fact, many logs arrived from there so badly infected that they were almost worthless.

He thought the thing could be easily explained. Shipping was very scarce owing to the war, and strikes in the northern State increased the difficulty. Logs were fallen and left lying, awaiting space, but sugar

was more necessary than the timber, and so the logs lay there, providing an ideal condition for borers to work, breed and spread. When eventually the logs did arrive south, many were absolutely riddled. Some logs were only slightly affected.

The difficulty of dealing with both these logs and those coming from outside the Commonwealth was that the borer did not always attack the logs from the outside. He frequently found logs quite free from borer on the sapwood, but badly affected in the heartwood. In these cases the borer entered the heart of the log through the heart shakes and splits, and worked outwards towards the sap. In this case it was useless attacking these logs from the exterior. After a great deal of thoughtful study of the subject, a test was made with live steam, and this proved so satisfactory that a huge chamber was constructed, capable of holding a number of logs or thousands of feet of timber. When the material is placed inside this chamber, the lid is closed and steam from a boiler turned on. From all tests made, his firm were quite satisfied they not only killed all the borers and larvae, but eggs as well.

He also spoke of the Powder Post Beetle, which attacked the sap portion of timber when seasoned. He claimed that frequently inferior timbers were used for house fittings and furniture when the prices rapidly rose above the existing prices in pre-war days.

The Powder Post Beetle readily attacked the sapwood of carribean, both red and yellow, bolligum, coachwood, Tasmanian stringybark, Tasmanian myrtle and scrubwood. He had noticed valuable timbers which, under normal conditions, were absolutely free from borer, become to a slight extent affected by being stacked in proximity to these inferior timbers.

Vote of Thanks.

Mr. A. Spain proposed that a hearty vote of thanks be accorded to the lecturer. He said that the meeting was much indebted to Mr. Froggatt for giving it the benefit of his research, and that no man was better versed in the subject of timber borers than he.

Mr. J. S. Adam seconded the proposition.

The President (Mr. G. H. Godsell) said that the Council of the Institute was fully seized with the importance of this matter, and had arranged with Mr. A. W. Anderson, one of its Past Presidents, to convene a conference of persons specially interested to discuss the question and determine upon a course for meeting the menace. Any gentleman interested should send his name to the convener. The President put the vote to the meeting, and it was carried by acclamation.

RAWSON INSTITUTE FOR SEAMEN

DAME MARGARET DAVIDSON'S APPEAL

£25,000 REQUIRED

FOREWORD.

I ask all members of the Institute of Architects of N.S.W. to take the following appeal on behalf of the Rawson Institute for Seamen to heart, and to contribute to its funds as liberally as they can.

G. H. GODSELL,
President, I.A.N.S.W.

Patrons: His Excellency the Governor, Dame Margaret Davidson, D.B.E.

President: Sir William Cullen, K.C.M.G.

Vice-Presidents: Lady Cullen, Commodore A. P. Addison, C.M.G., R.N., Sir Henry Braddon, K.B.E., Sir E. Owen Cox, G.B.E., Sir Samuel Hordern, Kt., Sir William Vicars, K.B.E., Douglas L. Dowdell, Esq., A. Gordon Wesche, Esq.

Honorary Treasurers: Sir Denison Miller, K.C.M.G., Oscar Lines, Esq., H. H. Massie, Esq., C. M. C. Shannon, Esq.

Honorary Secretaries: Miss Madge Cox, Miss Helen E. Knox, Mrs. R. W. Laidley.

Honorary Organisers: E. Gard Trouton, Esq., Clarence R. Hogue, Esq.

TO THE CITIZENS OF NEW SOUTH WALES.

Sydney is the greatest commercial port of the Commonwealth, and one of the great ports of the world. Australia's future is bound up with its sea-borne trade. Nevertheless, accommodation ashore at Sydney is notoriously inadequate to the needs of our merchant seamen, to whom we owe a deep debt of gratitude for their invaluable work during the War.

Notwithstanding the great National work performed by this Institution, no appeal has been made on its behalf to the public for 14 years. Therefore, the Committee have every confidence in issuing the present appeal.

In 1912, 40,000 men used the building of the Rawson Institute; last year the number had grown to 70,000, or nearly double.

At least £25,000 is urgently needed to provide additional accommodation and to admit of developments which are essential, if the Rawson Institute is to furnish reasonable comfort and entertainment for mer-

chant seamen whilst in port. All seamen, regardless of creed or nationality, are made welcome.

With the additions contemplated, the Institute would be equipped in a manner befitting Sydney with its vastly increasing trade, and would compare favourably with similar Institutions in other world ports.

Men of the mercantile marine to the number of 17,000 lost their lives in the War, and it is felt that an appropriate recognition of such heroic deeds performed will be the raising of the sum asked for by the Committee. The Navy is amply provided for by the Royal Naval House.

In a speech delivered at the Rawson Institute, the Governor-General said:—

“Without our Mercantile Marine, there would be neither exports from, nor imports into, this great Commonwealth. If there were no exports, those vast quantities of wheat, wool, meat, minerals—and I hope, later on, cotton—which you send on to England, would be of no value to you. If you could not import those things which you do not produce yourselves, the general level of prosperity would be considerably lower than it is.”

Lord Forster advised the Institute not to confine its attention for subscriptions merely to the business houses of Sydney, but also to make appeals to the people of the country districts, whose interests were just as much protected by the mercantile marine as were those of the town.

Subscriptions may be sent to any one of the Honorary Treasurers:

Mr. Oscar Lines, Bank of New South Wales.

Mr. H. H. Massie, Commercial Banking Co. of Sydney, Ltd.

Sir Denison Miller, Commonwealth Bank of Australia.

Mr. C. M. C. Shannon, Australian Bank of Commerce, Ltd.

Or to the Honorary Secretaries:

Miss Madge Cox, Miss Helen E. Knox and Mrs. R. W. Laidley.

No. 1 Scot Chambers,
Hosking Place,
Sydney.

September, 1922.

DEPARTMENT OF AGRICULTURE, N.S.W.

WHITE ANTS

Termites.

W. W. Froggatt, F.L.S., Government Entomologist.

Termites are small soft-bodied insects that live in communities and damage timber, trees, etc. They are popularly known as "white ants." Each community consists of a number of castes. The winged male and female "flying ants" may be mentioned first; one of the latter loses her wings and becomes the "queen" mother of the nest. Next are the "soldiers," whose heads are furnished with projecting jaws and act as guards in the nest. The third caste comprises the "workers," which are the main population of the nest, and are the forms that do all the damage.

The "white ants" always work under cover, so that their presence is seldom noticed until the damage to the house or timber is accomplished.

Houses.—The measures to be adopted in dealing with "white ants" are chiefly preventive, for example, constructing the building so that it is difficult for them to gain access, and treating all wood work with a poisonous or distasteful mixture, so that if they do gain access they will not attack it.

Where "white ants" are known to exist (and they are found in all parts of Australia) all earth under the proposed building should be dug over and all stumps, wood, etc., carefully removed. The floors should be raised well off the ground, so that one could easily crawl under them to examine the timber occasionally, and well ventilated underneath to prevent

"dry-rot," which is very often followed up by "white ants." Wood blocks (when used) and all joists and beams beneath the floor should be treated with an oil mixture well brushed in. Better still, when practicable they should be dipped into a trough containing crude oil, creosote or arsenic and oil mixture, before being placed in position.

Where the "white ants" have gained an entrance into a building a careful survey should be made of the damaged area; tapping the wood with a hammer will soon show where they are working, and a number of auger holes should be bored into the infested wood, and creosote or kerosene oil poured into them before the carpenter renews the woodwork. The oil will kill all "white ants" with which it comes into contact, and prevent their dispersal when the damaged wood is opened out.

Trees.—In cases where "white ants" have attacked orchard or garden trees, the ground should be opened out all round each tree and any damaged roots or wood removed. The scar should be treated with tar, and a pound or two of "kainit" or other chemical manure should be scattered over the roots before the soil is thrown back.

Any "white ant" nests, infested logs or bush trees in the vicinity of the orchard should be burnt. It is from these centres that the "white ants," working beneath the soil, reach the fruit trees.

CORRESPONDENCE

METROPOLITAN BOARD OF WATER SUPPLY AND SEWERAGE, SYDNEY

Dear Sir,—In 1908 the Board accepted an improved design of stall urinal of the non-fireclay type.

By 1916 experience showed it to be superior to all other designs, and the Board, by amendment of the By-laws, made the use of this type compulsory.

The Board finds that whilst owners, architects, builders and plumbers are quite willing to conform to its By-laws in this regard, the details of the design of this urinal are not generally known, with the result that many of these conveniences are constructed at variance with the Board's standard, so that alterations have to be effected in some cases.

The Board is anxious, in mutual interests, this condition of affairs should not continue, and with the

object of a clear understanding, has prepared drawings to indicate the precise requirements.

A copy of these is transmitted herewith for the use of your Institute and spare copies are available for free issue to any of your members, on application to the Superintendent of Plumbing of this Board.

Yours faithfully,

THOMAS ROSEBY,

Secretary.

The Secretary,

Institute of Architects of N.S.W.,

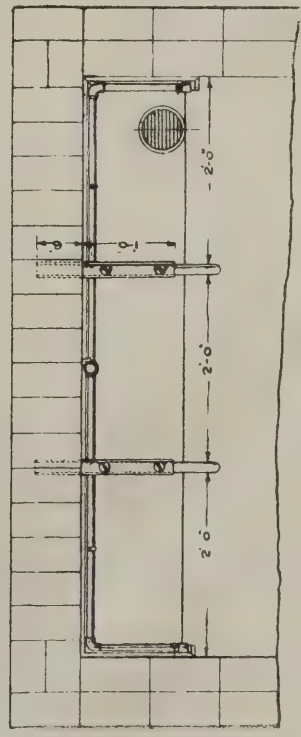
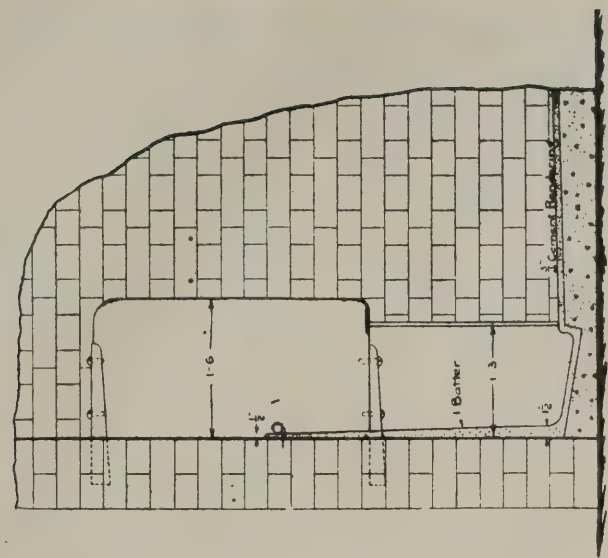
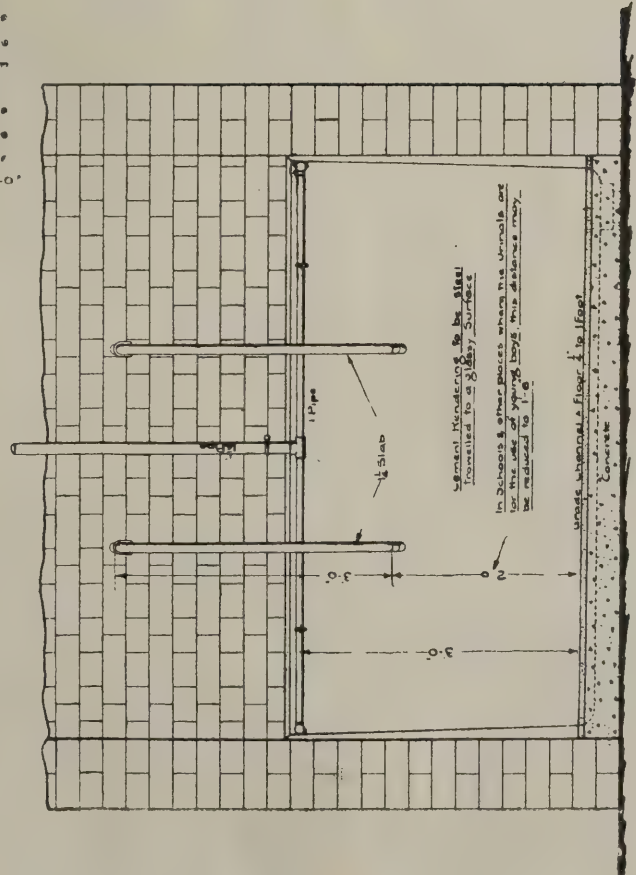
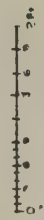
5 Elizabeth Street,

Sydney.

DESIGN FOR STALL URINAL
NON FIRE-CLAY TYPE

Reg. No. 11747
SCALE As marked.

Contract No.
Drawing No.



Detail of Channel Cross-Section.

REPORT OF THE ESTABLISHMENT OF THE R.I.B.A. EXAMINATIONS IN CANADA

The following report by Professor Ramsay Traquair has been received from the Council of the Royal Architectural Institute of Canada:—

The President,

The Royal Architectural Institute of Canada.

February, 1922.

Sir,—In accordance with the instructions of the Council, we have the honour to submit a report on the Examinations of the Royal Institute of British Architects and upon the possibility of establishing this system in Canada under the direction of the R.I.B.A.

Existing Examinations in Canada.—Examinations qualifying for membership in the local bodies are at present held by most of the Provincial Associations, and are compulsory for all desiring to practise as architects. It seems probable that this system of examinations leading to Provincial Registration will become universal in Canada. The standard of these examinations cannot, however, be raised above the minimum which may be regarded as essential for public safety in structure and hygiene and, even if Registration should become universal throughout the Dominion, it is doubtful if it will be possible greatly to raise the standard of admission. Experience seems to show that the legal qualification is accompanied by a low standard of admission.

The Universities.—A higher standard of education is set by the Universities, but, although office and professional experience are required as part of many of the University courses, it is not practicable in an academic course to give as full a professional as an artistic and cultural training.

Desirability of Voluntary Qualifications.—It would therefore seem desirable to establish in Canada a voluntary qualification, unshackled by legal requirements, of a high standard both culturally and professionally. Such a standard is at present attained in the British Empire by the Associateship of the R.I.B.A., and, provided that the necessary modifications can be made to adapt the system to Canadian needs, it might be to the advantage of the profession to have the high voluntary qualification offered to the younger architects. The R.A.I.C. seems to be the body to administer such a system for the following reasons:

1. It is allied to the R.I.B.A.

2. As it is precluded from interfering with the educational system or legal requirements of the various provinces, it is in all the better position to administer any

purely voluntary system applicable to the Dominion as a whole.

The R.I.B.A. System.—The R.I.B.A. Examination system is as follows. A candidate for the Associateship R.I.B.A. must qualify in three stages: (1) as probationer. This qualification is given on the production of certificates of general education. The standard of certificates of general education. The standard is that of a boy leaving school, and is rather below that of a university matriculation. No written examination is conducted by the R.I.B.A., but candidates must submit drawings to show that they have some ability in free-hand and geometrical drawing.

In Canada.—In Canada the standard of university matriculation, or of the school certificates at present accepted as equal to the examination, should be required, in addition to drawings. No examination need be held by the R.A.I.C. other than the examination of the certificates and drawings submitted.

Intermediate.—(2) The probationer is next required to qualify as "student" by passing the "Intermediate Examination." This includes historical architecture, mathematics, building construction and elementary design. The standard is lower than that which should normally be reached in a university course of three years.

Previous to admission to this examination, probationary drawings are required as "evidence of study." These include drawings of the architectural "orders," measured drawings of historical buildings, and simple building details.

Exemption from this examination is granted to students from "recognised schools" of architecture on the conclusion of three-year course, and, in general, to graduates in architecture of all overseas universities.

Application to Canada.—In applying this examination to Canada, it must be remembered that it is practically impossible for any Canadian student, without European travel, to attain to the English standard in Gothic or Renaissance architecture. Such travel must always be the privilege of the few.

The standard differs from the usual college course in that the candidate is required to show an intimate knowledge of one historical style only, but the knowledge of the English student is a knowledge of actual building, whereas that of the Canadian must be laboriously acquired from books and photographs. He has no opportunity of measuring or sketching "historic"

buildings, since such buildings, in the European sense, do not exist in Canada.

Whatever it may appear on paper, the Canadian student's knowledge of historic architecture must be of a different character from that of the English student. On these grounds it might be recommended:

1. That Canadian students be permitted to submit studies or drawings of American or Canadian Colonial and modern buildings as "probationary" drawings.
2. That a paper on American and Canadian Colonial and modern architecture be given as an alternative historical examination.

The paper on building construction will, of course, be in American and Canadian practice.

The Final Examination.—Before entering for the Final Examination, the student must submit and have approved not less than four designs to problems set by the R.I.B.A., and a thesis on some advanced architectural subject, historical, decorative or structural.

The final examination is confined to design, advanced construction, and the practice of architecture. The standard is such as to require practical experience in office and other professional work.

Candidates of a certain age and experience are, on the recommendation of the Council, permitted to qualify on taking this examination only. Such "special" examinations have been held in Canada from time to time, and are the only R.I.B.A. examinations which have been held in Canada.

Exemptions.—Exemption from the greater part of this examination has been granted by the R.I.B.A. to the students of certain schools and universities giving a five-year course. Students of these schools are required to pass the examination in "professional practice," and to submit four designs from their school work.

In Canada.—The questions set in the English papers are naturally unsuited to Canadian practice. In particular, owing to the more extensive use of steel and steel framing, and to the greater need of the Canadian architect, particularly if he is practising outside the large cities, to understand the use of steel and ferro-concrete buildings, it may be found desirable to maintain a relatively high standard in such construction in the Canadian papers.

The Universities of McGill and Toronto give five-year courses, which appear adequate to entitle their graduates to exemption on the terms given to the fully "recognised" schools in England. Arrangements could probably be made by which students from the other Canadian Universities could finish their courses in Toronto or McGill if they desire the full exemption.

Organisation in Canada.—In the event of the R.A.I.C. undertaking to administer these examinations in Canada on behalf of the R.I.B.A., it would be necessary to organise a Board of Examiners of which the Chairman and a substantial majority of members should be members of the R.I.B.A. This Board would draw up a full scheme in consultation with the R.I.B.A., and would appoint examiners. Owing to the small number of members R.I.B.A. in Canada, these examiners would in many cases not be members of the R.I.B.A., but they would be subordinate to the Canadian Board.

The Board would conduct the examinations simultaneously in as many centres as were found necessary, under the direction of the local Association or University, so that candidates would not have to travel far to sit for their examinations.

The Board would report the results of the three examinations to the Council R.A.I.C., who would report to the Council R.I.B.A.

The degree of independence to be allowed to the Canadian Examining Board is of the utmost importance. If it is to enlist the services of the most competent men, its actions must be respected and its decisions must be accepted.

It is suggested that the wisest course will be to make the Canadian Board as strong as possible, thoroughly representative of the R.I.B.A., and to grant it the fullest powers.

This requires the most careful attention both by the Council R.A.I.C. and by the Council R.I.B.A.

Students in Canada.—The students who may be expected to present themselves for examination in Canada are:

1. Unattached Canadian students. Owing to the lack of instruction outside the University courses, these will probably be very few in number. It is indeed quite probable that all Canadian students entering for these examinations will have more or less university training.
2. Students who have received a large part of their training in Europe, who have come to Canada and desire to complete their studies and obtain the qualification in Canada. These students will in many cases be entitled to take a "special" examination, consisting of the "final" only. They may require the complete course, but in most cases will come to Canada with a part of the course completed.
3. Students who have received their training in offices and by partial attendance at a University, but who have not completed the University course.

The regulations for the English examinations provide partial exemption for such students on evidence of

their having passed approved examinations in certain subjects in schools of university rank. These regulations are applicable to the Canadian examinations. They apply only to the "intermediate," and such students must take the full Final Examinations.

4. University graduates in architecture.

There are in Canada no technical schools which profess to give an architectural training, excepting the university schools, nor is there any system of pupilage by which a student can obtain his training in an office. It therefore follows that the Universities must play a very large part in any scheme of education.

The following scheme is suggested in dealing with them:

University Recognition.—There are in Canada five university schools of architecture, namely:—L'Université de Montreal (Ecole Polytechnique), McGill University, Toronto University, the University of Manitoba, the University of Alberta. The standard of training in these is approximately equal. Two give courses of five years: namely, McGill and Toronto.

These schools should be invited to enter the scheme on the basis of recognition outlined: namely, that a course of less than five years should be exempt from the intermediate, and a course of five years from the final.

These schools which desire recognition should be inspected by the examining board, who should report upon their standard and make a recommendation as to their recognition.

Thereafter the board should inspect the "recognised schools" every year and examine the whole work of the school. Graduating students, whose work was satisfactory, should be granted certificates stating the degree of their exemption, as regulated by the course which they have taken.

The work of the students of schools entitled to give exemption from the Final should be particularly examined at the close of the third, and at the close of the final year. The certificate of exemption should be granted on graduation only, and should not be granted to any student who did not graduate.

This will meet the objection felt by University Authorities to dividing the students into two classes—those qualifying for the R.I.B.A., and those not so qualifying. The student must be encouraged in every way to take the complete course without break, and no registration should be required, no certificate granted, or fee charged until the course is complete and the student has graduated.

Finance.—The examinations should be made to pay their own expenses. The principal charges will be:

- (1) External Examiners, not being members of the R.I.B.A., may require remuneration.
- (2) Invigilators for the examinations.
- (3) Secretarial Expenses.

The fee system should be as simple as possible. Information on this point might be requested from the R.I.B.A.

RAMSAY TRAQUAIR.

Chairman, Sub-Committee on R.I.B.A. Examinations.

INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

Intending applicants for admission are notified that the examination qualifying for candidature as Associate to this Institute in 1924 and thenceforward will be the equivalent of the final R.I.B.A., and that registration, firstly, as Probationer by submitting evidence as to education, and secondly, as Student, by passing the Intermediate Examination, will be necessary preliminaries.

Candidates can qualify for entrance as Associate at the 1923 Examination for the last time by passing an examination equivalent to the R.I.B.A. Intermediate without registration as Probationer.

* * *

Mr. Wm. Gill, A.I.A., of Casino, has forwarded an interesting account of observations made by him of the recent Eclipse.

FEDERAL COUNCIL OF AUSTRALIAN INSTITUTES OF ARCHITECTS

COMPETITION FOR AN ILLUSTRATED THESIS ON THE ARCHITECTURE OF THE RENAISSANCE IN ITALY, A.D. 1400-1600

Invitation.

The Federal Council of Australian Institutes of Architects offers a Bronze Medal for Competition amongst all students of Architecture of not more than 29 years of age at the date of closing of the Competition for

The Best Illustrated Thesis

on The Architecture of the Renaissance in Italy during the period 1400-1600 (approximately).

Adjudication.—The Competition will be assessed by the following three assessors, viz.:

Walter H. Butler, F.R.I.B.A., of Victoria.

G. Sydney Jones, A.R.I.B.A., of New South Wales.

Walter H. Bagot, A.R.I.B.A., of South Australia.

The decision of the Assessors in all matters connected with the Competition will be final and binding on all competitors.

Conditions.

Responsibility of Federal Council.—The Federal Council collectively and individually does not accept responsibility as to the safe transit, custody or return of the Theses forwarded or delivered by competitors, but it undertakes that all reasonable care will be exercised to prevent damage during the period they are in its custody, and that all Theses not placed will be returned to the authors without delay.

The Council reserves the right to publish any or all the Theses.

Subject Matter.—No Thesis should exceed 10,000 (Ten thousand) words. The work of the late William J. Anderson, A.R.I.B.A., on this period (latest edition) is to be taken as the principal text book, but competitors are advised to read the subject as fully as possible.

The following works are recommended:—

Prof. Simpson: *A History of Architectural Development*, Vol. III.

Prof. Banister Fletcher: *History of Architecture*. Large Plates.

P. Letarouilly: *Edifices de Rome Moderne*. Plates.

I. C. Raschdorff: *Palast Architektur von Ober-Italien und Toscana*. Plates;

together with any others quoted in Anderson's List of Selected Books which may be accessible.

A too literal resumé of the text is not desired, but quotations may be made in inverted commas.

Where authorities are found to differ in criticism, an opportunity occurs for statement of individual views. Biographical and statistical facts are of less importance than descriptive analysis of personal style, and of the distinctive features of a design.

Concentration on the work and the spheres of influence of ten principal masters is preferable to a slighter reference to a greater number.

Illustration.—By means of freehand sketches and geometrical drawings, may be in Indian Ink or in fixed pencil and neutral wash. Standard size of sheets, 15 inches by 11 inches should be adhered to, but, if required, larger sheets may be

reduced by folding to this size. Thirty per cent. of total marks will be awarded for quality and number of illustrations, 15% in addition for selection of same.

Illustrations should include:—

(a) Small scale diagrammatic plans and sections of typical churches, palaces, etc.

(b) Numerous freehand or partly freehand sketches of details not necessarily large nor highly finished. Several of these may be grouped on one sheet. Marginal sketches in the text are commendable.

(c) At least one full plate geometrical drawing, illustrating a characteristic mannerism of each of the principal masters referred to, by portraying a complete feature, e.g., one Bay of a Façade or Cortile, a balconied window or enriched doorway.

Manner of Submission.—Each competitor may submit only one Thesis with accompanying illustrations. Each Thesis is to be submitted without revealing the name of the competitor. The Thesis and sketches shall not bear any motto, name or distinguishing mark or decorative border, but all Theses shall be accompanied by a sealed opaque envelope containing the name and address of the author, and a declaration that the Thesis and illustrations are his own personal work. Such sealed envelope, which must be securely attached to the Thesis, will be numbered on receipt, and not opened by the Assessors until the adjudication is complete and the award made.

The successful competitor must be prepared to satisfy the Assessors that he is the *bonâ fide* author of the Thesis and illustrations submitted.

A Thesis shall be excluded from the Competition:—

(a) If sent in after the period named herein. (Accidents in transit excepted.)

(b) If it does not substantially fulfil the conditions stated herein.

(c) If the competitor shall disclose his identity or attempt to influence in any way the decision of the Assessors.

Closing Date and Delivery.—The Competition will close at 4 p.m. on March 31, 1923, and Theses must be received on or before the above date by Mr. John J. Lough, Assistant Secretary of the Federal Council, 5 Elizabeth Street, Sydney, N.S.W.

Questions.—Any questions arising out of the conditions may be addressed in writing to the Assistant Secretary of the Federal Council (Mr. John J. Lough) on or before December 30, 1922. Such replies as the Assessors may think necessary will be forwarded to all competitors, and form part of these Conditions.

ISSUED BY ORDER OF THE FEDERAL COUNCIL OF AUSTRALIAN INSTITUTES OF ARCHITECTS.

JOHN J. LOUGH,

Assistant Secretary.

15th September, 1922.

Agreed to by the Assessors.

W. H. BAGOT.

29th September, 1922.

SCHEME OF COMPETITION FOR THE ROME SCHOLARSHIP IN ARCHITECTURE

OFFERED BY THE COMMISSIONERS FOR THE EXHIBITION OF 1851, AND FOR THE HENRY JARVIS STUDENTSHIP, OFFERED BY THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The Rome Scholarship will be of the value of £250 per annum, and will be ordinarily tenable at the British School at Rome for three years. Candidates must be British subjects and less than 27 years of age* on 1st July, 1923.

The Jarvis Studentship will be of the value of £250 per annum, and will be ordinarily tenable at the British School at Rome for two years. This Studentship will be confined to Students or Associates of the R.I.B.A. (see section "B"), but otherwise the conditions for the two awards will be the same.

The Competition, which will be conducted by the Faculty of Architecture of the British School at Rome, will be in two stages:—

- A. A Preliminary Competition open to approved candidates.
- B. A Final Competition, open to not more than ten candidates selected from those competing in the Preliminary Competition.

A. The Preliminary Competition.

Application to compete in this Competition must be made on the prescribed form to the Honorary General Secretary, British School at Rome, 1 Lowther Gardens, Exhibition Road, London, S.W. 7, **not later than the 15th October, 1922.**

The application, containing a statement of the student's qualifications, will be examined by the Faculty of Architecture, in whose absolute discretion lies the granting or refusing of permission to compete.

Due notice will be given to approved candidates of the time and place of the Preliminary Competition, which will extend over a period of 31 days. The first twelve hours of the Competition will be held *en loge* at approved centres, and during this time the candidate will be required to make a sketch design of the subject which will be announced at the opening of the Competition. He will keep a tracing of the sketch design which he will deliver up at the end of the first 12 hours. The Faculty may at their discretion make a grant towards expenses incurred by a competitor in attending

an *en loge* centre at a distance from his place of residence or study.

The candidate may choose his own time and place for the execution of the finished designs, which must adhere substantially to the sketch design done on the first day.

The finished designs, together with the sketch designs, will be examined by the Faculty of Architecture, who will make a selection of not more than ten candidates to compete in the Final Competition.

B. The Final Competition.

The first part of this Competition will be held in London at the Royal Institute of British Architects, and will consist of a continuous examination of 36 hours *en loge*, during which time the candidate will be required to make a sketch design of the subject which will be announced at the opening of the Competition. He will keep a tracing of the sketch design which he will deliver up on its completion or at the end of the 36 hours. The Faculty may at their discretion make a grant, not exceeding £10, towards expenses incurred by a candidate in the Final Competition.

In the second part of this Competition, candidates will be allowed for the execution of their finished designs a period not exceeding 12 weeks. Candidates may complete their designs, which must adhere substantially to their sketch designs, in their own time and place.

The successful candidate in this Competition will be recommended for appointment to the Rome Scholarship, and the Student or Associate of the Royal Institute of British Architects who is placed next in order of merit, will be recommended for appointment to the Jarvis Studentship.

General.

All finished drawings must be sent to the Honorary General Secretary, British School at Rome, c/o The Secretary, Royal Institute of British Architects, 9 Conduit Street, W. 1, at the candidate's expense, and will be returned to him at his expense. Due care will be taken of all drawings submitted, but the Faculty will not hold themselves responsible for any loss or damage.

Each drawing must bear a pseudonym. A sealed envelope bearing the pseudonym on the outside and enclosing the name of the candidate and a declaration that the finished designs have been wholly designed and

* Admission to compete may be granted at the absolute discretion of the Faculty to candidates over 27 years of age, provided they have spent in War Service at least that number of years by which their age exceeds 27.

executed by him without the collaboration and assistance of anyone, must be forwarded to the Honorary General Secretary, 1 Lowther Gardens, Exhibition Road, London, S.W. 7, so that it may reach him on or before the date fixed for the receipt of the finished drawings. Under no circumstances should the sealed envelope be attached to the drawings.

The Faculty reserve to themselves the right, at their absolute discretion, to exclude any candidate from the Competition, to alter any of the conditions, periods, dates or times herein specified, and to decline to hold the Final Competition, or to select any candidate for it, or to make any recommendation for the awards.

The Faculty also reserve to themselves the right to publish photographic reproductions of, or exhibit, any of the works submitted by competitors.

EVELYN SHAW,
Hon. General Secretary.

Office of
The British School at Rome,
1 Lowther Gardens, London, S.W. 7.
May, 1922.

BOARD OF ARCHITECTS OF NEW SOUTH WALES

Conditions of Competition for Seal and Certificate.

Designs are to be delivered to the Registrar on or before 12 o'clock noon on 11th November, endorsed "Competitive Design."

Designs are to be submitted flat, mounted on cards without name or motto or other distinguishing mark, but accompanied by a plain opaque sealed envelope containing the author's name and address.

Competitors may submit designs for either the Seal or Certificate, or both.

(1) **The Seal.**—The Seal is to be 3 ins. in diameter, and will be cut on a die for an embossing press.

The design is to be drawn twice full size, i.e., 6 ins. diameter, in black line on white paper or card.

The design should embody the words:—

"Board of Architects of New South Wales," the Imperial Crown, and such other device, motto and other symbol as the competitor may suggest.

(2) **The Certificate.**—The Certificate will be printed in black ink on hand-made paper 22 ins. x 15 ins., with shorter sides to top and bottom, and is to contain the following wording:—

Board of Architects of New South Wales.
Certificate
No.

This is to certify that, in accordance with the provisions of the enactments provided for the registration of legally qualified Architects within this State, the Board of Architects of New South Wales has examined the qualification of

, who is hereby declared to be a legally qualified Architect.

Dated at Sydney
President.
, 19
Registrar.

Spaces must be provided for the name of holder; signatures of President and Registrar of the Board, and the Seal.

The design for Certificate is to be drawn full size.

Premiums.—Four premiums will be allotted to successful competitors. For the design considered to be the most suitable for the Seal, the premium will be £10/10/-, and for the Certificate, £10/10/-. For the designs adjudged to be next in order of suitability for the Seal, the premium will be £5/5/-, and for the Certificate, £5/5/-.

The designs will be assessed by the Board, and its decisions shall be final.

Premiated designs shall become the property of the Board. Unsuccessful designs will be returned, if desired, to the authors, but no responsibility will be accepted by the Board.

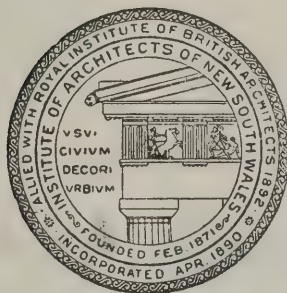
E. WILLIAMS,
Registrar,
Board of Architects of N.S.W.
Education Building,
Loftus Street, Sydney,
12th September, 1922.

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
N. S. War Memorial ...	—	Approved.
Port Said Memorial ...	31/3/23	Approved
Launceston War Memorial	1/11/22	Approved
Liverpool Memorial		
School of Arts. ...	30/10/22	Approved.
Gordon Recreation		
Ground Buildings. ...	31/10/22	Approved.

ARCHITECTURE

THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



NOVEMBER 15TH
1922

VOL 11. No. 11

PRICE ONE SHILLING

MINUTES OF AN ORDINARY GENERAL MEETING OF THE INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

Held at 5 Elizabeth Street, Sydney, on Tuesday, 10th October, 1922, at 8 p.m.

Present.

Mr. B. J. Waterhouse (Vice-President) occupied the chair, and there were thirty members present.

Minutes.

The Minutes of the Meeting of 12th September were taken as read, and confirmed.

Apologies.

Apologies for absence were received from Mr. G. H. Godsell (President), Messrs. J. S. Adam, A. Lanyon Clark, G. S. Keesing, R. V. Minnett and H. V. Vernon.

New Member.

Mr. C. E. Bridekirk, attending for the first time since his election, was welcomed by the Chairman and presented with his certificate of Fellowship.

Lecture.

Mr. Stuart M. Mould, F.I.A., delivered a lecture entitled "The Attitude of the Institute in relation to Architectural Education."

The Lecturer did not supply the usual typescript, and there is, therefore, unfortunately no record of his eloquent and valuable address.

In the discussion which followed, Professor Wilkinson, Messrs. J. Nangle, J. D. Moore, G. A. Roberts, J. A. Kerr and R. Keith Harris took part.

A vote of thanks was moved by Professor Wilkinson, seconded by Mr. J. Nangle, conveyed by the Chairman, carried by acclamation, and duly acknowledged.

Amended Ordinances.

Mr. L. C. McCredie moved, Mr. H. C. Day seconded, the following resolution, which was carried unanimously:—

"That this Institute affirms its approval of 9 feet as being the minimum height for ceilings, and also that 720 cubic feet be the minimum cubic contents of any one room."

It was decided to forward copies of this resolution to the Press for publication.

THE TRAPP COMPETITION FOR DESIGN OF A BUNGALOW

Invitation.

By the courtesy of Mr. V. B. Trapp, of Melbourne, prizes of £5/5/-, £3/3/- and £2/2/- are offered for competition amongst Architectural Students of New South Wales for the best three designs of a bungalow.

Definition.

In this competition, "bungalow" shall be defined as a one-storied building.

Age Limit.

This competition is limited to *bona fide* students of not more than 25 years of age at the date of issue of these conditions.

Adjudication.

The Jury of Award will be:—

B. J. Waterhouse, Esq., F.I.A., Vice-President of the Institute of Architects of N.S.W.

Professor Wilkinson, F.R.I.B.A.

A. S. Hook, Esq., President of the Architects' Association.

A member of the Master Builders' Association.

The decision of the Jury of Award in all matters con-

nected with the competition will be final and binding on all competitors.

Exhibition.

There will be a public exhibition of all drawings after judgment, and all drawings must be collected by the competitors within one week after the close of the exhibition.

Conditions.

Responsibility of the Institute of Architects.—The Institute of Architects does not accept responsibility as regards transit, custody or return of the drawings, forwarded or delivered by competitors, but it undertakes that all reasonable care will be exercised to prevent damage during the period they are in its custody.

Drawings.—Drawings submitted are to comprise:

Lay-out plan to 1/16 in. scale.

Ground plan, transverse

section, two or more

elevations to 1/8 in. scale.

Detail of one portion .. to 1/2 in. scale.

All to be drawn on Imperial sheets in pencil or ink,

and simply rendered in monotone and mounted on stiff cardboard or strainers.

Perspectives are not compulsory.
Information as to materials proposed to be used and as to other matters to which the competitor desires to draw attention is to be embodied on the drawings.

Manner of Submission.—Each competitor may not submit more than one design.

The design shall not bear any motto or distinguishing mark, name or decorative border, and shall be accompanied by a sealed opaque envelope containing the name and address of the author and a declaration that the design is his or her own personal work. Such sealed envelope, which must be securely attached to the drawings, will be numbered on receipt and not opened by the Jury of Award until the adjudication is complete and the award made.

Successful Competitors.—The successful competitor must be prepared to satisfy the Jury of Award that he or she is the *bona fide* author of the design submitted.

Disqualification Clauses.—Designs will not be considered in the competition if—

- (a) Sent in after the period named herein, except in proved cases of accident in transit.
- (b) They do not fulfil substantially the conditions stated herein.
- (c) The competitor discloses his or her identity or attempts to influence in any way the decision of the Jury of Award.

Site.—It is assumed that the site is a corner site, level, with views of hillside and water, and that the frontage to each street is 130 feet to the north and 250 feet to the east.

General Lay-out.—The lay-out plan is to show the position of bungalow on the site and arrangement of fences, paths, trees, flower beds and such like features.

Cost.—The cost need not be taken into consideration, the desire of the promoter being that the competitors should show how they would utilise Aus-

tralian timbers to the best advantage, without regard to cost.

Accommodation.—The bungalow is to be of timber construction on brick or stone foundation, and competitors will be expected to show the kind of timber to be used in each part of the building.

It is assumed that water, gas, electric light and sewer are available from the street.

The bungalow is to contain not less than eight (8) rooms and offices, but the sizes of the rooms must be decided by the competitors. The dining and lounge rooms must show internal fittings designed to save labour.

Closing Dates.—This competition will close at noon on 1st March, 1923.

All designs to be lodged with the Secretary of the Institute of Architects, 5 Elizabeth Street, Sydney.

Any questions arising out of these conditions may be addressed in writing anonymously on plain paper to

The Secretary,
Institute of Architects,
5 Elizabeth Street,
Sydney,

and in no other way. A copy of any such questions, which the Jury of Award considers should be answered and the answers thereto will be sent simultaneously to each competitor, but questions received after Thursday, 18th January, 1923, will not be answered.

JOHN J. LOUGH,
Secretary,
5 Elizabeth Street,
Sydney.

*Adopted by the Council of the I.A.N.S.W.,
24/10/22.*

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
N. S. War Memorial	...	Approved.
Port Said Memorial	31/3/23	Approved

INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

OFFICIAL OPENING

of the Institute's New Rooms on the Second Floor of the Royal Society's Building,

5 Elizabeth Street, Sydney, on Tuesday, 17th October, 1922.

The President (Mr. G. H. Godsell) invited all the members of the Institute and a representative list of visitors to be his guests at the Official Opening of the Institute's new home. There was but a sparse attendance of members, thirty only responding, but what they lacked in numbers they made up for in enthusiasm. There were fifteen visitors, including representatives of the Royal Society, the Institution of Engineers, the Master Builders' Association, the Public Works Department, and the Quantity Surveyors' Association.

The President received his guests in the Royal Society's Hall, then escorted them up to the new rooms, which were inspected and greatly admired. He then officially declared the new premises open, and afterwards entertained members and visitors in the lower hall.

The new rooms comprise a secretary's office, 16 ft. by 15 ft. 6in.; typistes' room, 16 ft. x 8 ft.; and common room, 34 ft. by 15 ft. 3 in. The common room has been decorated and lighted in artistic manner, floored with rubber and furnished with tables, settees and easy chairs for the comfort and convenience of members. It is later to contain well-stocked book-cases with valuable reference books. Members will find the common room an aid to physical and mental improvement, and if they take advantage of its opportunities, they will have cause to be thankful to those who have worked so hard for its acquirement.

Mr. Godsell said that the Institute of Architects was to-day in a fine position—it had passed through troublous times, had overcome all difficulties and obstacles, and now held the lease of a convenient suite of rooms. He was proud to be able to say that the Institute was able to pay its way, but he cautioned his hearers that unless every member lent his willing support the financial aspect might soon change. Mr. Godsell referred to the part the Institute had played in raising the standard of Architectural Education and to the fact that in harmony with the University and the Technical College, qualification for admission to the Institute as an Associate would be obtainable only by passing the Final Examination of the Royal Institute of British Architects, and that the same standard would be insisted upon by the Architects' Board for every man who, after the preliminary six months prescribed by the Act, wanted to be registered as an Architect.

The Institute having thus played its important part and the common room being now available, all the members, seniors and juniors alike, should get together and devise schemes which would tend to relieve the stress which hitherto had been borne by the few, and support and further the work which had been, so successfully inaugurated. The extent of the labours of the few in the Council and on the various Committees of the Institute was not realised by the majority, but the result of their labours was apparent. It was now for the whole body of members to determine to keep the level that had been attained, to maintain the Institute's status and uphold its prestige and not to be content with merely paying the annual subscription. He asked every Fellow in his audience to help to pay for the furniture of the new rooms, the cost of which was heavy, and to tell any absentees when he met them that the President wanted £250 to pay for the Institute's furniture in the Institute's rooms, to further the Institute's objects. Immediate and willing help was wanted, together with the realisation that there was abundant return to be had for the money both in present advantage and future developments. Mr. Godsell concluded with an exhortation in favour of loyal support to the men in office.

Mr. G. Sydney Jones (ex-President) referred to the past days of the Institute, when money was scarce and members few, and tendered his congratulations upon the present position. He spoke of the busts of Michael Angelo and G. Allan Mansfield, together with the portraits of Francis Greenway, Edmund Blackett and J. Horbury Hunt, all of which were displayed in the common room, and which were not only interesting reminders, but should be also spurs to emulation. He supported the President in his plea for general hearty backing by Institute members.

Mr. E. A. Scott said that the Institute, after many vicissitudes, had emerged from all difficulty and now was firmly footed. The Architects Act would convert what before was only a business into the great Profession of Architecture. He expected that the result of University teaching would be prominently apparent, but he held that University teaching without residence was comparatively of little value. It was in residence at the University that those friendships were formed which lasted for life and endured through disappointment and trouble. He scorned the idea that

members would cease their relations with the Institute when the Architects' Board had registered them as architects, and argued that registration should knit them together and make for closer association. Let the Seniors and the Juniors meet together in the common room, discuss their difficulties, bring their anxieties before men who might be able to give them good advice and assistance; let them band together and fight for one another as a solid union like the B.M.A., and much good must result. He was confident that the professional standard would be maintained in all its integrity by the splendid band of young ardent architects who were now making their names known and their influence felt. He had no doubt whatever as to the financial position. If the small expense incurred in the furnishing was not met, it would be most creditable to the Institute.

Mr. B. J. Waterhouse (Vice-President) said:—

"Mr. President, Fellow Members, and Gentlemen. After many years, the aspirations of many old members of this Institute have attained fulfilment, and it would not be fitting to allow this historic occasion to pass without recording a tribute to those who worked so laboriously and consistently for the welfare of this Institute, when through vicissitudes referred to by Mr. George Sydney Jones and Mr. E. A. Scott, it was rather depressing work.

"We must acknowledge that the work of past Councils contributed in no small measure to the fact now so happily consummated.

"We also desire at this opening ceremony to place on permanent record how much we as architects value the work of such men as Francis Greenway, Edmund Blacket, W. W. Wardell, and J. Horbury Hunt, so we have now hanging on the walls of our common room two fine drawings by Mr. Norman Carter, taken from old photographs of Hunt & Blacket, and also a reproduction of a drawing of Greenway, by himself, from a block prepared by *Art in Australia*.

"These men blazed the trail of architecture in Australia, and their work serves as milestones in its history.

"As time travels onward, records of other equally distinguished men will no doubt grace our walls, but we are too near to contemporary work to estimate its value.

"It must not be thought by members that because framed groups of gentlemen who have assisted in the work of this Institute do not now rest upon the walls that such efforts are ignored, but merely on account of duplication it was considered desirable to record same in an album with, where possible, the signature of the members.

"Personally, the possession of these rooms has been a matter very near to my heart, and the present moment is one of keen satisfaction, for I trust that they will become the centre of the interests of our Institute, a place where members will meet often under less formal conditions than business meetings, and thus develop that *esprit de corps* and atmosphere which will contribute in no small measure to that closeness of community interest and kindness of feeling so happily referred to by Mr. Scott."

Mr. Waterhouse mentioned that the following promises of financial assistance had been received:—

Value of one bookcase, £25; donation of books, valued at £50; and two promises of £10. And he hoped that other members would follow this good example and thus satisfy the President's wish that the cost of furnishing our rooms would be defrayed by special contributions.

Mr. A. Howie proposed "Success to the Institute."

He expressed appreciation of what had been accomplished, and predicted that before long the Institute would own its own building, wherefrom by letting off portions it would in perpetuity enjoy an ample revenue.

He was glad to participate in the friendly relations which obtained between the Master Builders' Association and the Institute of Architects, and held that together the two bodies might do a great deal in the direction of moulding the future architectural destiny of this great city.

Mr. W. F. Foster seconded the toast, and said:—

"Mr. President, Gentlemen.

"After apologising for my absence from this happy gathering, I feel somewhat diffident in rising to address you. Indeed, I feel somewhat as Mark Twain must have done, the announcement of whose death was, as he put it, a little exaggerated. But, gentlemen, I have surmounted some obstacles and am glad to be here to 'rejoice with them that do rejoice,' and surely with sufficient cause.

"The work of the Institute has of late years been markable; in what appears to me to be an incredibly short space of time you have secured for your own protection, and I hope for the profit of the State, a privilege granted to the architects of but few States or nations. I refer to registration. You have also been instrumental in establishing a Chair of Architecture in our University. May I remind you, gentlemen, of the old text, that 'from him to whom much is given, much will be required'? You have some great traditions, the names of so many of the architects mentioned by previous speakers are worthy of association with the best of your profession in any part of the world, and what you produce or mould of the present and future

generation should be satisfactory; but of necessity there must be some admitted to your ranks under legislative conditions who are not quite all that you desire—architects of the Pecksniffian order—the type of man who starts his work in the Classical, continues in the Romanesque, and finishes in the order described by London *Punch* as the Jerry Jabberwock. This will be your handicap at the beginning, but you have the future before you as a clean slate, and by what you write or design thereon will future generations decide whether the establishment of Architecture as a learned profession and the registration of architects were wise acts or not.

"Speaking as a master builder, I believe that you cannot possibly improve your own status without improving ours—the more of refinement, of dignity and character you display in your work and in yourselves, the more refinement, dignity and character there will be in us and in our work. One of the previous speakers drew attention to the busts of deceased architects which are displayed in your rooms, and I know that master builders may occasionally feel a desire to see that collection added to from the ranks of practising architects, but that is only a passing desire which vanishes when the liver becomes normal again; the average master builder can and does admire the architect who knows his own work and appreciates the work of the capable master builder.

"May I now obtrude something personal? I have known your President, Mr. Godsell, for some twelve years, and our relations to-day are more cordial than ever; whether I am working for him or not, there is no alteration in this respect. The tribute is, of course, to him, because the number of those who could get along with me for twelve long years is not as numerous as I would like. When I met him first, I thought his progress in the profession would be rapid, but it has been more than that, it has been astonishing.

"Of your Vice-President, Mr. Waterhouse, I have a profound respect, founded on an incident that happened some years since. I was reminded of that incident by a reference to-night to a certain cup which you temporarily hold as the result of a fluke which happened on the Sydney Cricket Ground last cricket season. This is the incident: Some years ago I did the Master Builders' Association the honour to represent it as a player against the Institute of Architects. I was batting, and, of course, the interest was intense. Mr. Waterhouse was bowling. In the heat of the moment he appealed against me for leg-before. The umpire, a stout man who plays cricket himself, but knows nothing about the game, sustained the appeal. I did not protest, as Lord Harris would have done

under similar circumstances. In as dignified a manner as possible I withdrew, but with bitterness in my heart. Mark the sequel: Twelve months went by, during which Mr. Waterhouse tried to make it up with me by appeals to tender for certain work for him, but I would not respond—incidentally I had never tendered for him before—and the day of the return match came. As before, I was batting. Mr. Waterhouse was fielding at long-on. I hit a mighty drive right into his hands. Did he try to catch it? Not he. Turning around, he watched that ball disappear, with a most benign aspect, and then was his honour satisfied and the bitterness left my heart. For twelve long months the wrong he did me festered in his soul, and I then learned, if I never knew before, the meaning of the phrase, "An Architect and a Gentleman."

"I trust, Mr. President, that what you have done in the past may be an augury of further progress for the Institute, that your progress may be as the ladder of St. Augustine, which, as you know, is formed of our dead selves, and by means of which we climb to higher things.

"I have great pleasure in supporting the toast, 'The Institute of Architects.'"

Professor Leslie Wilkinson expressed appreciation of the labours of the Institute in regard to the establishment and of its interest in the work of the School of Architecture. The young men who were now starting their architectural life in the school would, he hoped, carry on the good work of the Institute in their turn. The Architects Act was an important factor in creating professional pride, and he was glad to say that the Board had taken the Institute's advice as to making the Final Examination of the R.I.B.A. the test of qualification for future practitioners. There were a great many members in the Institute, but not nearly enough were present on this occasion. Comparatively few attended the general meetings, and still fewer tried to help the Institute by offering for service on the Council and Committees. He hoped that when the election time came round, as it soon would now, there would be a large candidature for the various positions. He likened the members to buttresses and pillars. Some were content to pay their subscriptions and buttress the Institute with financial aid from outside, but the men who were particularly wanted were those who would come inside and carry the burden of administrative, disciplinary and routine work, which now fell on the shoulders of a few enthusiasts. He said that the new rooms were convenient and suitable. If the President had his way, the Institute would be lodged in a palatial structure with a large hall and plenty of rooms to let and plenty of rent to collect.

Mr. G. H. Godsell proposed "The Visitors," and Mr. W. S. Dun (Vice-President Royal Society) responded.

Mr. G. H. Godsell proposed "The Secretary," Mr. John J. Lough; and Mr. E. S. Maclean supported.

Mr. Godsell had quite a number of nice things to say, and Mr. Maclean (Secretary Institution of

Engineers) took advantage of the opportunity to point out the advisability of the Architects, Engineers and Surveyors combining together and arranging for joint ownership of a building at the earliest opportunity.

Mr. John J. Lough replied.

Finale.—The evening terminated with "God Save the King" and mutual felicitations, at 10.30 p.m.

SPEECH BY MR. G. H. GODSELL, PRESIDENT OF THE INSTITUTE OF ARCHITECTS OF N.S.W.

At the MASTER BUILDERS' PICNIC, SYDNEY, on Thursday, 12th October, 1922.

As representing the Federal Council of Australian Architects and the Institute of Architects of New South Wales, I have once again the honour of addressing you at your annual gathering upon two matters which I think call for your serious and immediate consideration.

The first is the subject of Apprenticeship, and although you may consider at first sight that this may concern the Builder more than the Architect, I believe that on reflection you will agree with me that it is a matter of vital importance to both of us, for without competent Artisans the means of carrying into effect the Architect's conception will be non-existent.

I hope I may be wrong when I say that I believe there is serious danger of such a state coming about if we have to rely solely on this country for the supply of Artisans.

From the facts I have ascertained, both in my own practice and from my friends in the building world, I find there is a serious shortage of apprentices in every Trade, and particularly in that of Masonry—described by a friend of mine, a Builder, as "the noblest and certainly the oldest calling in the world."

I doubt if one apprentice exists in Sydney to-day—naturally we are all interested to know the reason for this serious development. I don't know whether it started before the introduction of Industrial Legislation or not, but one thing is certain, the trouble has been more marked since.

In the good old days the average boy followed his father's calling as a matter of course, and the father was proud if, in consequence of his assistance in teaching the boy his craft, the boy excelled the father. No one ever heard of the father being frightened that the boy would rob him of his job, but the Unions who have fought, and fought successfully, for the limitation of apprentices in many of the Awards made by the Industrial Courts and Wages Boards, express a real fear that such may be the case, and that the Trades may be

overcrowded by boys who, if they are not their own sons, are at any rate the sons of other men; but, after all, is not such a view a fallacy and narrow minded in the extreme, for surely if a calling is restricted, the demand for its product will diminish.

I regret to find also that many boys are precluded from being indentured to certain Trades through seeking admission when too old. To the uninitiated, this would appear farcical—I say it's tragical—let me give you one concrete example.

The head of a large concern engaged in an industry connected with building, received an application to apprentice a promising young fellow. The only inquiry was: "What is his age?" The reply was: "Seventeen or eighteen years." "Too old," was the rejoinder. "Before his period of apprenticeship is completed he will be of age and entitled to claim the living wage irrespective of his ability."

What a pitiful state of affairs to contemplate: that a boy whose parents have given him a good education to fit him for any vocation he decides to follow, or one who, after trying others, has only just found his vocation, should find himself too old at the age I have mentioned. I am quite aware that indentures are determined when an apprentice reaches the age of 21 years, but surely the continuance of the apprenticeship could be arranged by mutual agreement after the age of 21 years.

My inquiries have elicited the fact that the wages paid to boy labour and unskilled labour induce many boys with their parents' consent to take positions which frequently end in the Industrial scrapheap which awaits so many unskilled labourers.

There is urgent need for us all to impress upon boys who are trying to decide what calling to follow that a skilled tradesman is always in demand, and will enjoy regular employment when the market may be glutted with unskilled labour.

The Federal and State Industrial Courts appear to legislate for muscles rather than brains, but, believe me, there will soon be a great shortage of really skilled labour, not only in Building, but in other Trades throughout Australia, and those who qualify now will do well in the future.

There is little doubt that in years to come, if Industrial Courts continue to exist, the law will be administered by men who know something of the industries they control, and not by political appointees who know nothing about it.

Then there may be a cessation of such absurdities as that recently perpetrated by the over-lapping of Federal and State Awards, whereby a builder may pay under the State Award the same wages to a Bricklayer that he is compelled to pay under a Federal Award to the man who mixes the Bricklayer's mortar.

There is one other matter I would like to mention in respect to this. I am informed by a member of the Soldiers' Vocational Training Committee that the Federal Government have an arrangement with the Unions that the latter shall be the arbiters as to how many Trainees shall be allotted to the various Trades and, as a consequence, the Committee has to ask the consent of the various Unions before placing the men requiring to learn a Trade.

Such a state of things would appear impossible were I not well versed with the extraordinary methods adopted by the Hughes Government in respect to what one might term **studied** opposition to Private Enterprise. I am speaking now of the attitude of the Federal Government towards the Architects of Australia in regard to Canberra; and this affects the Builders as much as the Architects, because the work at Canberra is being carried out by Departmental day labour, and we who are paying the piper are not allowed to sound one note of the tune.

It is probably known to most of you present that in 1914 the Federal Government invited an International Competition amongst qualified Architects for the purpose of preparing designs for Parliament House, but owing to the outbreak of war the Competition was postponed until 1917, and meanwhile many Firms had spent a large amount of money in preparing designs which were nearing completion when the Competition was postponed for a second time.

Consequently, when in February last, at the Annual Meeting of the Federal Council of Australian Architects, it was learned that the Advisory Board to the Federal Government had recommended the expenditure of £1,000,000 during the period of the ensuing three years on architectural works, and as of that sum £110,000 was allocated to the erection of Parliament

House, the members of the Council considered it advisable to interview the Minister for Works and Railways and place the position before him as it appeared to them.

The view the deputation took was, that whether the proposed expenditure was on residential accommodation for the Governor-General, for Parliament House or for the most modest Workman's Dwelling, the whole scheme should be one great ideal built in unison and harmony from the least to the greatest, and surely the Architectural Profession was entitled to a voice in the matter when public money was being spent on a work of this magnitude.

Further, that the best brains of the Architects in the Commonwealth were at the service of the Government, and the interests of every Australian Architect was centred on ensuring one great result and avoiding mistakes which would be costly and defeat the great project in view. It was further urged by Members of the Deputation, that the Architects of the Commonwealth were not directly represented, and a request was made to the Minister to allow the Federal Council to nominate a gentleman to act on the Advisory Committee in the interests of the Profession without any cost to the Government, to assist the Board, but the reply received on 17th March from the Minister for Works and Railways was to the effect that—

"He had placed the points raised by the deputation before Cabinet, and that after careful consideration it had been decided that there was no reason that any alteration should be made in the constitution of the Advisory Board."

Now, gentlemen, the Minister was hostile to any outside body taking precedence to the officers of his Department, and he has since stated that the officers of the Department are as well qualified to deal with the construction of Canberra as the practising Architects of Australia. My reply to this is that if such was the case, the gentlemen inside the Department existing on small salaries would come outside and stand the test of Public Competition with their co-temporaries. But this does not suit the Minister of the Socialistic Hughes Government, and although the Minister has by letter pledged the Government that the designs for Monumental Buildings at Canberra shall be the subject of competition, and the plans in connection with the competition for Parliament House are still in the offices of competing Architects, the actual plans for this building have been prepared by the Federal Department of Public Works, and were illustrated in the *Daily Telegraph* on Saturday and Monday last under the heading of "Provisional Parliament House," but

note the cost is estimated at £174,000, and we are told that this is not a Monumental Building—need I say more!

And, in conclusion, gentlemen, I wish to press upon you the necessity of giving your earnest consideration to both the matters I have brought under your notice. First of all, I beg you to fight for the existence of your great calling, and for all the fine old traditions of

apprenticeship; and, secondly, beware of a Government which, whilst levying excessive taxation, ignores Private Enterprise.

Is it on account of the Socialistic tendencies of the Federal Government that Mr. Hughes is afraid to face his Bendigo constituents, and is therefore seeking a seat in North Sydney? If so, we should all know what answer to give him.

TASMANIAN INSTITUTE OF ARCHITECTS.

THE ANNUAL MEETING.

The 19th annual meeting of the Tasmanian Institute of Architects was held at the secretary's office on Tuesday night, Mr. B. R. Walker occupying the chair. An apology was received from the president (Mr. A. H. Masters, Launceston), who was unable to attend.

The secretary read the annual report and balance-sheet. The report stated:—"It is pleasing to report that the past year has been a prosperous one and that the prospects, especially in the capital city and suburbs, seem better than ever. There have been no strikes to contend with, and the worst trouble we have been faced with has been the shortage of bricks, which has caused a lot of delay on many jobs. This can, to a certain extent, be attributed to the enlarging of the brick area by the Hobart Municipal Council. There have been no competitions during the year, but the conditions are advertised for the Launceston memorial, and will be advertised for the Hobart memorial shortly. It is to be hoped that the members will give these competitions the support they deserve. The matter of registration has been laid aside pending the change of Government which has taken place. Your institute got no support at all from the ex-Premier, but we anticipate much better results from the present Government, and it will be incumbent on the incoming officers to exert themselves and obtain the much desired registration of architects. We can congratulate West Australia and New South Wales on their success in getting the bill made law in their States. The following new members have been elected during the year:—Messrs. A. J. Doran, Hobart, S. E. Churcher and H. S. East, Launceston. The annual conference of the Federal Council, which was to have been held at Hobart last year, did not take place owing to the mainland delegates being unable to make the trip, and a special meeting was called at Melbourne, which Mr. Masters attended, and of which we have received a full report. It was decided to adopt the proposed scale of charges, and

these will be submitted for adoption by this institute. Your president regrets being unable to journey to Hobart to attend this annual meeting and deliver a presidential address, but wishes to be included in the report an appeal to members for more co-operation and more publicity for the work achieved by the profession."

The chairman, in moving the adoption of the report and balance-sheet, said that he was pleased to congratulate the members on the successful year they had had, and had much pleasure in welcoming the new members. With regard to the Registration Bill, he hoped, now that it had become law in New South Wales and West Australia, another effort would be made to bring the measure before the Tasmanian Parliament. He regretted the absence of the president, Mr. Masters, who was unable to come from Launceston to attend the meeting.

The motion was seconded by Mr. Koch, and supported by other members, and carried.

The following officers were elected for the ensuing year:—President, Mr. B. R. Walker; vice-president, Mr. A. C. Walker; hon. treasurer, Mr. Roy S. Smith; hon. secretary and librarian, Mr. Ray N. Butler; assistant secretary and northern representative, Mr. A. H. Masters; council, Messrs. R. Koch, G. S. Crisp, and C. Stroud Glaskin.

On the motion of Mr. Butler, seconded by Mr. Koch, it was decided that the institute approach the Hobart Municipal Council requesting them to form a committee to consider the revision and administration of the Hobart Building Act, and that the institute be represented on this committee.

The proposed conditions regarding the Hobart war memorial was discussed, and the matter was left in the hands of Messrs. B. Walker and Koch to place the institute's views before the War Memorial Committee.

PROFESSIONAL CONDUCT AND PRACTICE

In order to place on record the considerations which govern the conduct of honourable Architects and the customs accepted and observed by the Architectural Profession, the Council of the Institute of Architects of N.S.W. declares the practice of Architects to be as follow:—

1.—PERSONAL AND INTER-PROFESSIONAL OBLIGATIONS.

1. The Architect is both an artist and a technician. He designs the construction, the internal and external proportions, arrangements, decoration and accessories of buildings, directs their execution and regulates the expenditure upon them.

2. The profession of Architecture is liberal and uncommercial. It is incompatible with the business of a builder, manufacturer, dealer in (or agent for) materials used in buildings, or of an auctioneer or house agent.

3. An Architect is remunerated solely by his fees, and is debarred from any other source of profit in connection with the works and duties entrusted to him.

4. An Architect who owns, or has a commercial interest in, any material, device, or invention used in building informs his client thereof, and obtains his sanction before permitting it to be used in works executed under his direction.

5. An Architect does not act as a tradesman or broker, and accepts no business which involves his giving or receiving discounts or commissions.

6. An Architect does not publicly advertise, nor offer his services, by means of circulars or other means of publicity employed in trade and commerce. But he may publish illustrations or descriptions of his work, since these contribute to the common fund of knowledge. He may exhibit his name on buildings in course of execution (providing it is done in an unostentatious manner), and may sign them when completed in a way similar to that adopted by sculptors of repute.

7. An Architect declines to obtain work or clients by means of presents, commissions, reductions of his fees, or inducements to agents and subordinates. He refuses all secret dealings with regard to a client or a prospective client.

8. He abstains from seeking in any way the clients of another Architect or the appointments held by him. Should he be

called upon to accept such clients or appointments by reason of the death, retirement or rightful termination of the employment of another Architect, he considers himself the guardian of the honour and interests of his predecessor.

9. An Architect recognises the professional standing of his brother Architects, and admits the right of that title of all who honourably exercise the profession. He is careful to observe towards them the courteous consideration due from one artist to another.

10. The copyright of an Architect's design is the property of the author, and is scrupulously respected by other Architects. His knowledge and experience should nevertheless be always at the service of his profession.

11. When an Architect employs other Architects as draughtsmen or assistants, he gives them his aid and counsel, and treats them with the consideration proper to members of the profession.

2.—OBLIGATIONS TOWARDS CLIENTS.

12. The Architect devotes his whole ability and knowledge to protecting the just interests of his Clients. He uses all his knowledge, skill and experience in designing the buildings entrusted to him, directing their execution, regulating the expenditure upon them, and giving his opinion and advice.

13. But he does not lend himself, even at his Clients' request, to proceedings calculated to infringe the rights of others, nor undertake operations which appear to him likely to injure his reputation, to compromise others, or to lead to accidents. In such cases he intimates to his Clients that he finds himself unable to carry out their instructions.

14. He also notifies his Clients as far as possible when their alterations to proposed works are likely to increase the cost thereof.

15. An Architect is remunerated by his Clients (and by them alone) by means of fees, under the Conditions of Engagement stated in the Scale of Professional Charges authorised by the Institute of Architects of N.S.W. He accepts no remuneration or payment of any kind whatever from builders, merchants, buyers or vendors of land or property, under contract with his Clients unless with their full knowledge and approval.

16. In connection with current repairs, administration, and other matters in which charges are made for time and services rendered, the Architect usually delivers his Clients periodical accounts of his work. For new works, and for important alterations to or renovations of existing buildings, he receives interim payments on account of his fees as laid down in the Scale of Professional Charges authorised by the Institute of Architects of New South Wales.

17. An Architect declines judicial functions in a matter in which he has already expressed an opinion on the subject of dispute. When he is nominated as assessor or arbitrator, he ceases to represent his Clients, and acts impartially.

3.—OBLIGATIONS TOWARDS BUILDERS AND OPERATIVES.

18. An Architect exerts his personal influence to establish harmony, cordiality and good faith between all those engaged in his works. In so far as is compatible with his duty to his Clients, he endeavours to save expense to the Builders, and laudably to the operatives, encourages them to take an interest in the work, and receives with courtesy their technical suggestions for improvements.

19. An Architect interprets the conditions of a Contract with impartial fairness between his client and the Builder. He supplies the Builder with clear instructions, and informs him of his intention by means of drawings, or otherwise, at each stage of the works as possible in order that the Builder may make favourable arrangements for their execution.

20. An Architect does not permit the insertion of any clause in tenders, bills, or other contract documents which provides for payment to be made by the Builder, whatever may be the consideration, unless with the full knowledge and approval of his Clients.

21. An Architect does not accept any count, gift, or business commission from Builders and tradesmen, whether employed upon his works or not.

22. Unless specially so requested by his Clients, he does not undertake the payment of Builders.

23. Should an Architect have occasion to reprove a builder or foreman, he does so in such a way as not to impair his authority with the operatives.

SCALE OF PROFESSIONAL CHARGES

Based upon the practice of the Royal Institute of British Architects, adopted by the Institute of Architects of New South Wales, as from (date to be fixed by council), all previously issued Scales of Charges, being hereby cancelled.

CONDITIONS OF ENGAGEMENT.

The Architect is employed subject to the following Conditions founded upon the customs of the Profession, and his remuneration is payable according to the Scale of Charges hereinafter stated, which shall be fixed and accepted on the basis of same conditions:—

- a) That the general supervision which the Architect will give to the work is such periodical inspection by him or his deputy as may be necessary to ensure that the work is being carried out in accordance with his design, but constant superintendence of the Works does not form part of the duties undertaken by him and is not included for in the following Scale of Charges.
- b) That in all cases in which constant superintendence is required a Clerk of Works shall be employed for this purpose. He shall be nominated or approved by the Architect and appointed and paid by the Client. He shall be under the Architect's direction and control, but the Architect shall not be held responsible for any fraud or negligence on the part of the Clerk of Works.
- c) That the issue of a certificate by the Architect for a payment to the Builder implies only that in the Architect's opinion work has been done at the date of the certificate entitling the Builder to the amount stated in accordance with the agreement, and to the best of his belief in accordance with the contract or order.
- d) That the Architect has authority to give such orders on behalf of the Client as are necessitated in the Client's interests by constructional emergencies.
- e) That the Architect is empowered to make such deviations, alterations, additions and omissions as he may reasonably consider desirable in the Client's interests in carrying out the works, provided that no material addition to the cost of the contract or order is caused thereby.
- f) That the fees of any Consultant or Consultants retained for any part of the work by the request of the Client shall be paid for by the Client.
- g) That all drawings, specifications and documents prepared by the Architect shall remain his property, the copyright in the same being reserved to him.
- h) That the quantity surveyor's fees shall be paid by the Client.

SCALE OF CHARGES.

Clause 1.—For taking the Client's instructions, preparing sketch design, making approximate estimate of cost by cubic mea-

surement, or otherwise, preparing drawings and specification for the purpose of estimates, obtaining tenders, advising on tenders, and in preparation of contract, selecting and instructing Consultants, supplying copies of drawings and specification required by local authorities such drawings, etc., as the Architect considers necessary for the Clerk of Works, if any, and supplying to the Builder one copy of the drawings and specification and such other details as are necessary for the proper carrying out of the works, general supervision as above defined, issuing certificates for payment, and passing and certifying accounts, the charge in respect of new works is to be a percentage on the total cost of all executed works as follows:—

- (a) If the contract or order exceeds £2,000 the percentage is to be six per cent.
- (b) If the contract or order does not exceed £2,000 the percentage is to be ten per cent. in the case of works costing £100 graduated to six per cent. in the case of works costing £2,000 as the special character of such works may render appropriate.

Clause 2.—

- (a) For services in connection with alterations, additions, or repairs, other than in the extension of existing work carried out to the same designs, the minimum charge shall be seven and a half per cent.
- (b) For assessment of damages due to fire or similar causes and adjusting claims for compensation:

Two and a half per cent. on the amount of adjustment.

For preparing plans and specifications and obtaining tenders in connection with such adjustment or reinstatement:

Two and a half per cent. on the total expenditure.

For supervising reinstatement in connection with such damages and passing accounts for payment:

Two and a half per cent. on the total expenditure.

SPECIAL FEES FOR FITTINGS, DECORATIONS, ETC.

Clause 3.—For specially designed fittings, decorations, furniture, sculpture, leaded or stained glass, ecclesiastical or other memorials or monuments and similar special works, other than buildings, the minimum charge shall be ten per cent. on the total expenditure.

FEES FOR OMITTED WORK.

Clause 4.—In addition to the percentage on the total cost of executed works, the Architect is to be paid in respect of all works included in the tender, or ordered by the client, but not executed, two-thirds of the charge which would have been due upon them had they been carried out.

FEES FOR PARTIAL SERVICES.

Clause 5.—If the project or part of it be abandoned, or if the services of the Architect cease or are dispensed with before the contract is entered into or order given, the

charge in respect of the works abandoned or for which the Architect was employed (as the case may be) are as follows:—

- (a) For taking Client's instructions, preparing sketch design sufficient to show accommodation and type of design, and making approximate estimate of cost, one-fourth of the percentage stated in Clauses 1 or 2 (as the case may be) on the estimated cost of such works.
- (b) For taking Client's instructions, preparing sketch design, making approximate estimate of cost, and preparing drawings and particulars sufficient to enable quantities to be prepared or a tender obtained, one-half of the percentage stated in Clauses 1 or 2 (as the case may be) on the estimated cost of such works.

PAYMENT OF FEES IN INSTALMENTS.

Clause 6.—On a contract being entered into or order given for the works, the Architect shall be entitled to an instalment of one-half of the charge calculated on the total amount of the contract or order, and no part of such payment shall be reclaimable from the Architect in the event of the subsequent abandonment of the works. The remainder of the Architect's remuneration shall be payable by proportionate instalments from time to time as the work proceeds.

FEE WHEN WORK IS EXECUTED WITH OLD MATERIALS, ETC.

Clause 7.—In all cases where work is executed wholly or in part with old materials, or where material, labour or carriage is provided by a Client, the percentage shall be calculated as if the works had been executed throughout by a Builder, and with new material.

FEE FOR DAY LABOUR OR SEPARATE CONTRACTS.

Clause 8.—When the work is carried out by day labour or separate contracts, or on a percentage basis, involving the checking and passing of accounts or time sheets, the minimum charge shall be seven and a half per cent.

When work is so carried out, the Architect shall in no way be held responsible for the cost of such work, nor for any of the risk or liability attached to the office of the builder, the Client in all such cases taking upon himself all such risks, liabilities and responsibilities.

SERVICES NOT INCLUDED IN PERCENTAGE.

Clause 9.—The foregoing percentages do not cover the following services, for which, and for any other services not covered by any payment herein provided for, additional charges may be made in accordance with the amount of work involved:—

Advising as to the selection and suitability of site. Negotiations relating to the site or building. Surveying the site or building and taking levels, and making surveys, measurements, and plans of existing buildings.

The preparation of further sketch designs necessitated by a material alteration in, or addition to, the Client's instructions, or altering the working drawings and

specification in consequence thereof prior to the commencement of the works. Altering drawings, or preparing new drawings, and other services involved in consequence of variations or additions desired by the Client after the commencement of the works. Making extra drawings for the Client's or Builder's use, and making drawings for and negotiations with ground landlords, adjoining owners or others, and making applications for licences and consents.

Making arrangements in respect of party walls and other easements, reservations or restrictions. Services in connection with litigation or arbitration. Services consequent upon or resulting from the death or bankruptcy of Builders or the failure or neglect of Builders from any cause whatever to carry out the works in accordance with the contract or order or consequent upon the fraud or negligence of the Clerk of Works. Services in connection with fire, flood, or tempest during the execution of the works, and services in connection with the planning of grounds or gardens.

APPROVAL OF LESSEE'S PLAN.

Clause 10.—For approving plans submitted by a lessee and for inspecting the work during its progress so far as may be necessary to ensure the conditions being fulfilled, and certifying for lease when required, the charge is as follows:—

For each £100 or part of £100 of the total cost up to £500, two and a half per cent., the minimum fee being £3 3s. For

each £100 or part of £100 from £500 up to £5,000, one and a quarter per cent. For each £100 or part of £100 above £5,000, one per cent.

LITIGATION AND ARBITRATION.

Clause 11.—For qualifying to give evidence, settling proofs, conferences with Solicitors and Counsel, attendances in Courts or before arbitrators or other tribunals, and for other services in connection with litigation and arbitration the charges are based upon the time occupied and the professional standing of the Architect with a minimum fee of £5 5s. per day.

SANITARY SURVEYS.

Clause 12.—For inspecting, reporting and advising on the sanitary condition of premises, charge is by time in accordance with Clause 17, the minimum fee being £3 3s. in addition to the cost of assistance and appliances.

MEASUREMENTS.

Clause 13.—This does not apply when the Architect's fees are covered by Clause 1.

(a) When an Architect is instructed to measure and value for the purpose of arriving at the amount of an interim certificate, the minimum charge is half per cent. upon the amount. Minimum fee £2 2s.

(b) Measuring for and making account of variations upon building works, including pricing, the charge is two and a half per cent.

DILAPIDATIONS.

Clause 14.—For estimating dilapidations and furnishing or checking a schedule of

the same, the charge is five per cent. on the sum agreed, the minimum fee being £5. For negotiating settlement of claim and for other services, the charge is, by time in accordance with Clause 17.

Where one Architect acts between both parties, the minimum charge shall be so and a half, divisible between them.

VALUATIONS.

Clause 15.—For valuing property for whatever purpose, the charge is as follows.

Minimum fee in small matters, £2 2s.

Minimum fee of £3 3s. on each property valued provided the valuation of a single property does not exceed £2,000.

Minimum fee of £4 4s. for valuation over £2,000 and not exceeding £5,000.

Minimum fee of £6 6s. for valuation over £5,000 and not exceeding £10,000.

Special fees for valuations over £10,000.

TRAVELLING TIME.

Clause 16.—If the work should be beyond a radius of 10 miles from the G.P.O. Sydney, an additional charge may be made under Clause 17.

TIME CHARGES.

Clause 17.—In cases in which charges are based upon the time occupied, they will depend upon the professional standing of the Architect, the minimum fee being £5 5s. per day, exclusive of charges for Assistant time.

EXPENSES.

Clause 18.—The foregoing scale is, in all cases, exclusive of travelling and hotel expenses, and all other disbursements, which are to be charged in addition at first-class rates.

FEDERAL COUNCIL OF AUSTRALIAN INSTITUTE OF ARCHITECTS

BRONZE MEDAL COMPETITION, 1921

AN ARCHITECTURAL THESIS ON BLOMFIELD'S "HISTORY OF RENAISSANCE ARCHITECTURE IN ENGLAND," 1500-1800

Introduction.

"New structures that inordinately glow,
Subdued, brought back to harmony, made ripe
By many a relic of the archetype
Extant for wonder: every upstart church
That hoped to leave old temples in the lurch,
Corrected by the theatre forlorn,
That as a mundane shell, its world late born,
Lay and o'er shadowed it."

Thus, Browning tells of that new departure in architecture, which, along with a similar change in the realms of Art and Literature, took place in Europe at the beginning of the 15th century.

This new departure, known generally as the Renaissance, represented the re-introduction or re-birth of Classic forms, and arose in Italy, spreading thence over

the whole of Western Europe, including Germany, France and England. It is to the latter country that Reginald Blomfield, M.A., in his book, "A History of Renaissance Architecture in England," gives his particular attention.

In considering the development of this new style in England, mention must be made of the fact that Brunelleschi (that great pioneer of the Renaissance of Italy, who crowned the Florence Cathedral with its dome, and who reared the Pitti Palace) had been dead seventy years, and Venice was busy lining her canals with palaces, when Torrigiano brought the first Italian forms to England and applied them to the tomb of Henry VII., in Westminster Abbey.

Blomfield, when speaking of the inception and development of this new style, takes three groups of facts

as illustrating the tentative efforts, growth and final adoption of a new departure in architecture, attempting to encroach on a style which had become part of the life of the country, and one which had culminated in some of the finest ecclesiastical conceptions in the world, viz.: the Gothic period of English Architecture.

These three main divisions are as follow :—

- (1) "The various isolated attempts of foreign workmen, in nearly every case, Italians, to introduce their own particular methods of workmanship."
- (2) "The efforts of half-instructed native builders and of Flemish and German workmen."
- (3) "The mature Palladianism introduced by Inigo Jones, a method so modified and adapted by his genius as to be the foundation of all subsequent architecture in England for the next two hundred years."

In addition to the above, Blomfield makes mention of what practically constitutes a fourth group, viz.: "Those buildings, which, there is no reason to connect with Renaissance rather than with Gothic architecture; buildings which fairly represent the continuous building traditions of the country."

Although, as Blomfield explains, it was due to Henry VIII's agency (a more or less unconscious one) that foreign workmen were first introduced into England in any numbers, the way had nevertheless been paved beforehand.

For the previous fifty years it had been the custom of English scholars to "repair to Italy to learn the humanities."

They returned home, if not in love with, at any rate, familiar with Italian ideas and methods of expression, and if they did nothing to hasten the impending change, it was very probably their poverty and not their will, was the cause of their inaction.

Introduction of Italian Workmen.

It is in the works of the newly-enriched monarchs, nobles and Church dignitaries (who had profited by the dissolution of the monasteries) that the first real evidences are seen of the Italian invasion.

The reason for the Italians having practically the monopoly of the work does not necessarily mean that the English were incompetent workmen, but rather that it was the fashion introduced at court, and naturally followed by the monarch and his retinue, to employ these foreigners.

Again, jealousy on the part of Henry VIII. was a considerable factor in the importation of Italian artists. Henry's rival, Francis I. of France, had secured the services of several such men. Why not he?

Although this royal polygamist had exerted great efforts, they were of comparatively little avail.

A few Italians, however, complied with his requests, and of these Pietro Torrigiano was undoubtedly the most celebrated. It was to this man that Henry VIII. entrusted the construction of the tomb for his late father, Henry VII.

The design which had been approved by the late king was discarded and the work taken entirely out of the hands of the English workmen engaged upon it.

No other Italian, whose name had been preserved, has left any great or lasting example of his work in the country to which they were loath to come and only too glad to leave.

One other foreign figure which stands out among those of minor importance in the early years of this new movement is that of a German, Hans Holbein.

Although the latter did a fair amount of work in England in different branches of art, the influence of his manner is difficult to trace far, if at all, past his death.

While dealing with the works and lives of these foreigners, mention must be made of another Italian, John of Padua, who, while possessing a position of considerable importance in the writings of that time, has left no example of his work, which can be attributed to him with any degree of certainty.

It is a curious fact that, although Italians were, at this time, i.e., the early part of the 16th century, beginning to come into England in considerable numbers, actual Italian detail still had very little hold upon the fancies of English workmen.

If Shakespeare's works can be taken as depicting a correct view of the life of England at that time, it is only necessary to read his impressions as embodied in Iachimo and in the more terrible Iago, to gain some idea of the popular conception of the Italian.

What foreign detail is to be found in England in the early part of the 16th century, seems to have been confined chiefly to superficial ornament which had by no means a universal application. This ornament was carried out very largely in two materials which are, essentially, suitable to decoration, viz.: plaster and terra-cotta.

As already mentioned, the first work embodying Renaissance detail that was executed in England was the tomb of Henry VII.

Blomfield states, that a tomb (that of John Young, 1516) which was being built at the same time as Henry's, was finished before that of the late monarch's.

Be this as it may, it is clear at all events, that it was to this class of work, that Italian efforts in the main part were at first directed.

This state of affairs seems to have existed right up till the death of Henry VIII. in 1547.

To glance now at the work itself.

Apart from the embellishment of tombs (amongst which, that known as Wolsey's should be mentioned as being particularly fine), the Italian workman restricted his efforts, principally, to modelling terra-cotta busts, figures and coats-of-arms to adorn the outsides of buildings. Good examples of these are still in situ at Hampton Court.

The early work on this building is typical of the manner prevailing in the early part of the 16th century.

Hampton Court was built by Cardinal Wolsey as his principal residence, but was presented to the king by him a short time before his fall.

On account of its close proximity to London, the centre of political activity, Henry naturally made it one of his chief residences, and had it altered and enlarged to suit his increased requirements.

Here, then, as is only to be expected, is to be found some of the best work of the time.

Now as to the character of the work executed at this time, exemplified in the king's newly-acquired residence.

In its essentials it is of a late Gothic type, with just touches here and there of Italian detail.

For example, all the principal windows are traceried and cusped, and both windows and doors have flat-pointed heads. The spandrels of these doors, however, are filled with a carved decoration, which must be classed under the head of the New Style.

Fan-tracery vaulting is also still adhered to, but Renaissance detail is clearly in evidence in the terra-cotta roundels built into the walls; also in a fine replica of Wolsey's coat-of-arms modelled in the same material.

What happened at Hampton Court, happened elsewhere, *i.e.*, a Gothic structure received an application, more or less, of Italian ornament. Sutton Court and Marney Tower both bear witness of this.

This, then, all tends to show that although the English workmen had been in close touch with these foreigners, the former were very loth to adopt a new style which was one about which they still had apparently considerable misgivings.

The native workmen were, however, undoubtedly aware that a new influence was at work, and they seem to have been even willing to succumb to this new influence, provided that the circumstances were favourable.

Before passing on to a turning point in the history of English Renaissance architecture, which occurred soon after the death of Henry VIII., mention must be made of one building in which, according to accounts which have been handed down, the Italian manner was largely

in evidence. This was the Palace of Nonesuch, in Surrey.

Erected by Henry VIII., for pleasure and retirement, this palace was (to quote the words of one Paul Hentzner, a German) "built with an excess of significance and elegance, even to ostentation; one would imagine that everything that architecture can perform, to have been employed in this one work, there are everywhere so many statues that seem to breathe, so many miracles of consummate art, so many casts that rival even the perfection of Roman antiquity, that it may well claim and justify its name of 'Nonesuch.'"

Notes from the pens of several writers of that day are preserved to us, and they not only fully bear out the above description, but supplement it with lavish criticisms of this now vanished building.

Of this evidently beautiful work nothing now remains except a painted panel or two preserved at Loxly, in Surrey, and possibly a few fragments in other houses in the district.

Fine as Nonesuch must have been, it does not seem to have left any impression on English architecture, but was probably the culminating point of the Italian movement, which had lasted through the greater part of Henry VIII.'s reign.

Exode of the Italians.

About the middle of the 16th century, the Italian workmen (who, by the way, had given evidence in their work that they, and the few French who may have come, were more artists than architects), now began to leave, and their place was taken to a certain extent by Germans and Flemings. At first glance this is somewhat surprising, but on looking into the matter, several likely reasons for this change became apparent.

German and Dutch.

The excommunication of Henry VIII. by the Pope had tended to divert the trade from Roman Catholic to Protestant countries.

The religious situation of the time also supplies a feasible and likely reason. Henry VIII., notwithstanding his differences with the Pope, was a Roman Catholic; under Edward VI. there was to be had a certain amount of religious toleration. Mary was a Papist.

It was not until Elizabeth came to the throne in 1558 that Roman Catholic workmen began to suffer any inconvenience because of their religion. On the accession of this new monarch, however, things changed and they, *i.e.*, the workmen, ardently considered it prudent to withdraw.

Germany and the Low Countries were even more Protestant than England, and the new batch of workmen to arrive were naturally nearly all of this creed.

Blomfield records, in his "History," Vol. I page 31, that a Casper Vosbergh, who, together with other Germans, was employed on the work at Burghly, petitioned Lord Burghly in 1572 "for privileges for a German church to be founded at Stamford."

Practically throughout the whole of Elizabeth's reign German influence and methods were paramount.

The work was perhaps somewhat more sober than that of the country from whence it came, but the feeling was nevertheless the same.

The almost mechanical workmanship of the Teutons is clearly portrayed in the chimney pieces and monuments, instances of the latter being found in nearly every Elizabethan house of any importance.

The influence of German art, however, began to weaken at the beginning of the 17th century.

This weakening may be attributed largely to an edict, which (according to Professor F. M. Simpson) was issued by Queen Elizabeth two years before her death.

This edict, or proclamation, commanded that all Dutch and Flemish merchants were to leave the country; it appears fairly certain that most foreign workmen left also.

The influence of the Germans seems to have made more impression at the time on English architecture than that of the Italian, but the influence of the former was not so permanent in its results.

One outstanding feature is to be noticed, when looking back over the work of the 16th century in England. In spite of a practically complete monopoly of the building trade by foreign craftsmen the house plan has shown an uninterrupted development, although the house itself was clothed in foreign decoration and ornament according to the fancies of the builder.

Before entering more closely into the work of this century it is perhaps advisable to look back and try, if possible to discover evidences of an outstanding English land amidst a period of foreign occupation and ideas.

Designers of Elizabethan Houses.

The first name to attract attention (one not, however, mentioned by Blomfield) is that of one John Shute.

According to Professor Simpson, Shute in 1550 was sent to Italy by the Duke of Northumberland to study architecture, and in 1563, the year of his death, he published his "Chief Groundes of Architecture."

"This was the first attempt made in English to explain the rules and principles of Classic Architecture."

Shute describes himself as a "Paynter and Archytecte," but no known buildings can be ascribed to him with any degree of certainty.

Who was John Thorpe? This question has called forth a considerable diversity of opinion. According

to Mr. J. A. Gotch, in his "Early Renaissance Architecture in England," Thorpe was the architect of many of the finest Elizabethan country houses, while Professor Blomfield states that he (*i.e.*, Thorpe) was mainly employed to survey houses and lands, although that writer adds that he may also have designed some buildings. Thorpe's name is perhaps best known through his sketch book, which has been preserved and is now in Sir John Soane's museum.

It is very probable that he was architect for several fine country houses such as Holland House, Rushton Hall, etc.

There is sufficient evidence left us to prove that he was closely associated with Kirby Hall in Northamptonshire.

Thorpe has written on the plan of this building in his sketch book the following:—"Whereof I layed the first stone 1570."

Although his plan differs in certain respects from the finished work, there is ample evidence to show that Thorpe was a very able architect.

At this time the names of a number of men are prominent as having designed important buildings in the new style. They are of comparatively minor importance, when tracing the development over the whole of England. The following may, however, be mentioned together with some of the buildings attributed to them.

Sir Thomas Tresham, associated with John Thorpe at Rushton Hall.

Robert, John and Huntingdon Smithson. The first died in 1614, and is designated in his epitaph as "Gent, Architector and Surveyor unto the most worthy house of Wollaton with diverse others of great account." John Smithson, possibly a son of Robert, died at Bolsover in 1634, and was succeeded by his son Huntingdon.

John and Huntingdon are credited with Bolsover Castle and Hardwicke Hall, Derbyshire. These two men also gain a certain prominence through having left a great number of drawings, about two hundred in all—and these have been carefully preserved. The drawings are very varied and, in conjunction with Thorpe's collection, form a most valuable record of Elizabethan work.

Other names to receive recognition by Blomfield are those of Thomas Holt, a carpenter more than an architect; Ralph Simons, and John Abel. While making interesting reading, the methods and works of these men are comparatively unimportant, and may, perhaps, be passed over.

And now, passing on to the 17th century, one in which English Renaissance underwent a drastic

revision, carried out by Inigo Jones, to look back at the character of the work itself during the past hundred years.

Early Planning.

Before the time of Henry VIII., owing to the unsettled state of the land, the question of defence was one of first importance. The moat, that feature so closely associated with old English castles, still exists as a witness of those troublous times. These castles were, as a general rule, built with a courtyard in the centre, approached by a single doorway guarded by a portcullis and drawbridge.

The invention of gunpowder, however, rendered these old castles more or less obsolete, but the general plan was adhered to in the larger houses, built in the early years of Henry VII.'s reign.

While the plan was at first necessarily irregular, the site being still of some importance for defensive reasons, it was from this arrangement that the various types of the larger Elizabethan houses gradually evolved.

The following are examples which retained the general quadrangular plan with one or more courts:—Kirby, Burghly and Audley End.

In smaller works, a similar plan was sometimes employed, the central court, however, being rather for the purposes of light and air, than architectural effect.

Elizabethan Planning.

As the century progressed changes were made in these plans; changes brought about, possibly, by a desire for better lighting, ventilation, and also convenience.

The growth of Classic influence also aimed first and foremost for symmetry, as is exemplified by a perfect balance being kept in regard to bay windows, rooms, etc.

The central feature of the Elizabethan house was the hall, and around this, the whole series of apartments comprising the house, were grouped.

The planning at this time may be said to be comprised of three main divisions—the hall, with the kitchen at one end and the parlor at the other.

This arrangement continued to be the dominating motive of house design till the time of Inigo Jones, when the hall lost its importance as the centre of household life, and became merely an entrance.

To this central group, then were added those other rooms which are found necessary for the sake of convenience or defence.

In regard to the latter, however, as already mentioned, times were changing, and precautions against attack were not now so necessary. The arrangement of the hall itself seems to have become almost standardized in the latter part of the 15th and the earlier years of the 16th century. An oblong compartment, cut off at one end by a screen, thus forming an entrance passage, called the screens, was the invariable practice. At the other end was a raised dais lighted at one or both sides by a bay window, while in one of the side walls, was a fireplace. Communication was obtained from the dais end of the hall to the family apartment and from the other end to the kitchen and adjuncts.

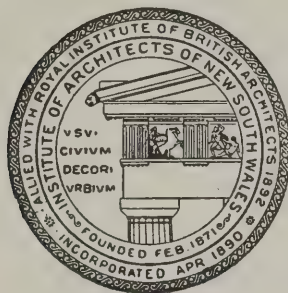
While Renaissance details often crept into the decoration, the fabric itself of these buildings was thoroughly Gothic.

As the century progressed greater attention was paid to symmetry, not only external, but also in the internal courtyards. The plan was now designed on axial lines, the entrance gateway being directly opposite the doorway of the hall, even though the latter was on the far side of the courtyard. Kirby Hall, Northamptonshire, is a good example of the foregoing, being a typical specimen of Elizabethan work.

(To be continued.)

ARCHITECTURE

THE JOURNAL OF PROCEEDINGS
OF THE INSTITUTE OF ARCHITECTS
OF NEW SOUTH WALES



DECEMBER 15TH
1922

VOL 11. No. 12

PRICE ONE SHILLING

MINUTES OF AN ORDINARY GENERAL MEETING

OF THE INSTITUTE OF ARCHITECTS OF NEW SOUTH WALES

Held at 5 Elizabeth Street, Sydney, on Tuesday, 14th November, 1922, at 7.30 p.m.

Present:

Mr. G. H. Godsell (President) in the chair for the first part and Mr. B. J. Waterhouse (Vice-President) for the second part, and about fifty members. The visitors were Mr. J. F. Munnings, A.R.I.B.A., on his way back to New Zealand, and Mr. Evan Smith, *en route* to Melbourne.

Apologies were received from Messrs. John F. Hennessy, Jack F. Hennessy and H. V. Vernon.

Minutes.

The Minutes of General Meeting of 10th October were taken as read and confirmed.

Lecture by Mr. J. F. Munnings, A.R.I.B.A.

Mr. Munnings gave a delightful lecture or talk, as he preferred to call it, upon "Architecture in India," and illustrated it by a number of lantern slides, some of which had been taken under exceptional circumstances. Mr. Munnings did not supply the usual type-script but promised to forward one from New Zealand, so that his discourse will later on be permanently recorded in *Architecture*.

A vote of thanks was proposed by Mr. G. Sydney Jones, seconded by Professor L. Wilkinson, carried with hearty acclamation and conveyed to Mr. Munnings by the Chairman.

The following Paper on Draughtsmanship was then read by Mr. L. C. McCredie, A.I.A.:

Architectural working drawings are the lineal presentation of the ideas of the architect in his interpretation of the problems which he has to solve; they are also the medium by which he conveys his ideas to the builder and as such should be of the very best he is able to produce, for it is largely through them that the materialisation of his schemes is made possible. If this can be accepted as a corollary, then the drawings should be perfect in themselves and the man who is responsible for their making should take as great an interest in their drafting, and should derive just as much pleasure from the work, as the painter does in the production of his picture.

Unfortunately for the architect, his work is not inseparable from a commercial aspect, and it becomes necessary for him to consider the most expeditious and efficient way of production. This does not mean that the minimum amount of time should be spent on studying and drawing up each problem. Far from it. If the architect is to save himself from future trouble and expense he must spend ample time and thought

on the preliminary work before even the working drawings are started. Accuracy and completeness should be uppermost in his mind at all times and each and every portion should be so carefully considered that when the drawings are finished they *are* complete, and by complete I mean containing, literally, everything that the building shall contain, then the drawings should be sufficient in themselves to settle any dispute that may occur during the progress of the work.

Since registration of the profession is an established fact, and we have a higher standard of education for the future architect, it necessarily follows that architecture will improve, the status of the architect will be greater, and a generally increased confidence on the part of the layman will be attained. It will therefore become unprofitable to slum the work in our offices, and to continue the practice, which is all too prevalent, of doing just as little drawing as possible, and in many cases less than the necessary minimum. If we do not study and draft our work thoroughly then the client is not receiving the service for which he pays and we are storing up trouble and possible expense for ourselves.

It is not too much to say that the majority of drawings produced in architects' offices fall far short of the necessary standard to enable the work to be put into execution as it should be. It might be argued that these plans are sufficient for their purpose where supervision is carried out efficiently, but every architect knows that errors and variations occur when there is no authority constantly on the job, and if the drawings cannot be accepted as the authority for everything required, then they fail hopelessly in their purpose.

It is my intention to deal shortly with the various stages in the production of modern working drawings.

In the past, before the introduction of prints, it was the custom to make drawings on Whatman's or other paper, pencilling them in accurately with fine lines and showing as much detail as possible even on the eighth scale drawings. They were then inked in and traced and retraced for each copy required, then all were coloured—a laborious and costly proceeding.

I have seen one-eighth inch scale drawings of the General Post Office at Sydney, most accurate in the drafting, but in which every particle of detail and ornament was correctly drawn throughout the full length of the Martin Place elevation, and not only on the original but on each tracing or copy.

Such minute work might be commended for its industry and accuracy of drafting, but a greater waste of time and useless effort could hardly be imagined. Later, every moulding and ornament had to be detailed, in the process of which detailing, it was probably amended, and, consequently, showing it on the one-eighth inch scale was waste of money.

However, drawings might be filled in just as laboriously as these were, and yet be incomplete, for the art of producing modern working drawings is not to make fine pictures, but to produce efficient, practical, and workmanlike sheets, indicating everything that is required in its right place and avoiding useless repetition.

Whatever the building may be, all details of design, construction and fittings should be considered fully in the sketch stage, before an attempt is made to place them on tracing cloth. It is not necessary to draw out slavishly on paper every detail that must go ultimately on the finished drawings, but everything should be kept in mind and in the early stages it is as essential to consider such things as lighting points, piping, conduits, etc., in relation to the various parts as it is to consider them as portions of the actual building.

To produce a fine sketch of a public library is of little use if, after reaching the working drawings, it is found that they must be altered materially because the heating and ventilating plants and their respective ducts have not been thought out before.

Similarly, a well-designed room of fine proportions and good architecture may be ruined by the subsequent alteration of height of ceiling or the inclusion of false work to hide the necessary but unsightly services. Again, particularly with reinforced concrete construction a good design may be ruined by the inclusion of boxing to hide a hitherto ignored soil pipe. Electric conduits are a frequent source of annoyance if left till later.

It is not necessary merely to consider lighting points in relation to the floor area of the room, but ceiling plans also should be made so that points can be accurately fixed without the fear of beams and other obstructions coming in the way.

These discrepancies frequently occur and could be avoided if given consideration during the sketch stage.

It would seem that in the preliminary work so many things are to be considered that they will occupy a great proportion of the time. Such, I contend, should be the case. Far too little time is spent on the sketches and preliminary studies, and a feverish haste is generally shown to rush the job onto tracing cloth and to have it printed, with the frequent result that an enormous amount of time is lost at a later date in alterations and adjustments.

The whole scheme, as between architect and client,

should be thrashed out and finalised in the sketch stage and, indeed, I go so far as to say that the sketches with whatever perspectives the architect cares to make, should be the only drawings on which the client is consulted.

It is my experience that the average layman understands a properly executed working drawing as little as he does a barrister's brief, and in most cases so wrong an impression does he get from the geometrical and technical drawings of plan and elevation that it quite upsets his preconceived ideas of the finished building.

It is sufficient that he recognises them as the technical representation of the architect's ideas and they should be such.

No patient ever stops to argue about a doctor's prescription. To the patient it is enough that a qualified man has drawn it up after consultation.

And so it should be between architect and client. If this practice were adopted much saving of time to both parties could be effected.

The final sketches should be accurately drawn to scale that they may be used as a basis for setting up the finished drawings.

Assuming that the preliminary stages have been finalised and the sketches completed, it becomes necessary to push on with the working drawings, but before entering upon this section of the work I wish to say a few words in regard to the size of sheets.

In these days of high costs it is necessary to look to all quarters for methods of economy, and if we consider that standardisation is of the greatest importance in reducing costs it follows that we must adopt it extensively in the drafting room.

It would not be exaggerating to say that fully 90 per cent. of the plans produced to-day could be done on far less material than is customary, and when one considers that prints are charged for at so much per square inch and that storing cabinets and space is governed by the size of sheets, it suggests the adoption of several standard minimum sizes.

Each architect, by his own practice and experience, is able to determine these sizes, but it should not be a difficult thing for this Institute to adopt standard sizes for its members with due regard to the economical cutting of tracing cloth and printing paper. If possible, no sheet should be more than 24 inches in height. It will fit then into a moderately deep cabinet or press and also make for convenience in working.

Anything in the nature of elaborate border lines should be avoided as they detract from, rather than enhance, the appearance of the sheet, besides being a waste of time.

The old-fashioned heading has seen its day and indeed, has stayed too long.

All that is necessary is a little block, for instance, six inches by four inches on the bottom right-hand corner, stating clearly the nature of the job, what particular drawing is on the sheet, and the scale, with sheet number if necessary, and such other information as may be thought fit for identification and record purposes.

The architect's name in all cases should be written in his ordinary signature, and its inclusion, with the date on the sheet, should signify that the particular drawing has been checked and found complete.

The days when a draftsman laboriously spread himself over a sheet in lettering what he proudly called the heading is, I hope, fast disappearing; the practice is a useless waste of time and, moreover, is inefficient. The time spent on neatly lettering across the top of an imperial sheet the words "Proposed Warehouse for John Smith, Esq.," if put into L.S.D. and multiplied by the number of sheets will, of course, give its total cost. Its value is nil.

If there is more than one sheet to a set all should be bound together in their respective sets, a two-inch margin being allowed for this purpose on the left-hand side.

All drawings should be stored flat in drawers, for in this manner they occupy less space, are readily accessible and are not so liable to collect dust, any set of drawing being located in the drawer on reference to the lower right-hand corner.

In many offices in America it is the custom to keep tracing linen ready cut into standard sized sheets with the title plate and margins lined in ready for use. This work is generally done by an office-boy or girl, who is responsible for the storing of the drawings.

If the sketches have been efficiently done and finalised, it will now be merely necessary to work up the finished drawings on the linen, placed over the sketches for this purpose. It will now be quite an easy matter to make adjustments and corrections without further paper drawings, thus saving time and an unnecessary use of material.

After the working sheets are completed there is no reason why the sketches should not be destroyed as they form no part of the contract, and if everything is to be shown on the working sets, they become so much lumber. Similarly, the spare copies of prints can be destroyed on the completion of the building.

It is unnecessary to keep more than the original tracings and contract set of prints, and, indeed, for the further economy of space, I think the original tracings themselves should be the contract set.

It is essential that the tracings be kept up to date

with a full record of extras or alterations that may be made from time to time, with the date of such revision clearly marked. Small local blue prints can be made of such parts for attachment to each of the other sets that all may be uniform.

Before the drawings are inked in they should be checked and dimensioned. It should be unnecessary to use a scale at any time on the finished work.

Most of our drawings for general purposes are to one-eighth inch scale and this is sufficient for all but the smaller type of buildings, but I think great advantage would be found in the adoption of one-quarter inch scale for domestic work. It might be argued that this would make unnecessarily large drawings but the proper use of this scale would eliminate much detail work that otherwise becomes necessary. And it would enable structural parts to be more readily presented. It also has the advantage of enabling the builder to price his work more keenly.

No set of drawings should go out to the quantity surveyor or to the builder without a proper number of detail sheets. In fact, I do not consider a set of working drawings complete unless all the necessary details, short of full size, are included. It is not waste of time to include these, and if a proper system is observed it will not add to the time of production. They are absolutely necessary for accurate quantities and keen tendering.

The usual specification can be greatly reduced, thus saving time and labour, and, indeed, in my opinion, it can be eliminated entirely on most jobs where quantities are properly cast and the drawings correctly done, but this is entering the field on another question which has yet to be considered, namely, "Should the Bill of Quantities form part of the Contract?"

Without going further into the question, I think the time has come when the specification as we know it has seen its day.

As an instance, I would quote the case of a large building in Sydney which was completed successfully, and although the usual specification had been written, not only was it found unnecessary to refer to it at any time, but the specification itself was never on the job.

Efficient drawings and supervision with properly drawn bills of quantities are all that are necessary.

To those who question the wisdom of such a policy I would say there is more efficiency and less chance of error in saying what you have to say on one document, be it a plan or otherwise, than on two or more; furthermore, it takes less time to show what is intended right on the drawings than it does to write a story about it in a book.

After the sketch stage has been finalised and the actual structural and general drawings started, the plans will be the next consideration. Each floor plan should be on a separate sheet. This is most important as it reduces the size of sheets and enables the builder to have each on its respective floor, during the erection of the building. It also enables the draftsman to trace one plan over the other, thus making for greater accuracy and saving time. All the accessories, such as lighting, ventilation, heating, etc., will have been roughed out before. Throughout the production of the plans the signs, plus and minus, should be used extensively to signify heights and levels, and each floor should be used as a datum for all on that floor; this system is quite simple and extensively used in other countries. Thus a column footing on the footing plan might have placed beside it the figures —3ft. oin. —4ft. oin., one placed above the other, which at once indicates that the footing is 12in. deep and the top 3ft. oin. below the level of the floor. An elevation or section of such a footing would be superfluous.

Similarly with steel framing plans, a beam might be marked —6in., which means that the top flange is 6in. below the floor level. The size of the beam itself, if marked or shown in a schedule, will readily give the level of its seating. Here, again, there is no need for a vertical section or elevation.

To extend the system, windows on plan would be marked sill plus 3ft. oin. head plus 9ft. oin., which indicates the windows as being 6ft. oin. in height themselves and 3ft. oin. up from the floor. This, with the widths clearly figured, gives the sizes of the openings without hunting for them on an elevation or cumbersome section, and the note "type A, see sheet 12" will refer to a standard window or one **shown on a special detail sheet** which I will mention later.

This system should be adopted for all openings and wherever possible, and it will be readily seen that where the requisite number of elevations and details are included the one-eighth inch scale sections can be entirely eliminated in all but such buildings as theatres, grandstands and the like or where floors are of graded type, but even in these I would make the sections purely skeleton in form, for the ordinary section gives nothing that cannot be shown on the plans and elevations, and its elimination saves an enormous amount of time and trouble.

It is customary to show a quadrant at door openings to indicate the swing of the door with a line meeting it from the hinge jamb. It is a good plan to write the door size and thickness on this line with a reference to the type detail sheet as suggested for the windows. Repetition should be avoided. If there are many doors

or windows or other portions of a similar character and size, the simple note "as at X" is all that is needed. It is only necessary to show each particular case once, and by so doing time is saved and the possibility of mistakes reduced to a minimum.

On the plans light points should be clearly marked, preferably on a ceiling plan, and the position of switches should be indicated. The same thing applies to soil pipes, vacuum chains, inlets and pipes, vent. ducts, etc. In fact, nothing that is intended for the building should be omitted.

These various services can be indicated by symbols, the use of which is not altogether foreign to us, but there is no standard in this country, and, consequently, what stands for a ceiling point in one office represents a wall bracket in another. In many of the American States standard symbols are used. It would not be a difficult thing to introduce here and the advantages are obvious.

I have frequently seen reinforced concrete floors cut away and great holes dug into walls to admit of pipes which, although very necessary, were omitted on the drawings. Mentioning them in a specification does not overcome this difficulty. It is another argument in favour of dealing with one document instead of two.

We find it necessary to indicate the swing of a door by the quadrant I have previously mentioned. Is it not as important to locate a pipe correctly? All these things can and should be shown on the plans, for it is to the plans we must refer ultimately when setting out the work.

On plan also should be shown joists and plates, and here, again, a simple system, such as writing the vertical height first, will save a further drawing to indicate which way the timber is set: thus, 10in. x 2in. would be figured for a floor joist and 3in. x 4in. a plate.

When the tracings are finished it is customary in this country to have as many helio prints as are required for the various copies and colour them so that the various parts can be readily distinguished, and for this purpose it is generally found necessary to put the whole staff onto one job in order that it may be completed in reasonable time. After all, colouring is only the use of so many symbols and it is done simply to draw attention to the various materials of which the building is composed—red for brick and perhaps blue for concrete—but, unfortunately, it has to be done on each copy of the drawings and, in consequence, is likely to vary, and it always takes a long time. If these symbols are turned into lines of varying form, such as hatching, spattering, etc., and placed on the original tracings then they require to be done only once and are faithfully reproduced on each print, a key being placed on each sheet to indicate what is intended. As

the colouring factor in this case is eliminated, blue prints will answer the purpose. They are a little over half the cost of helios in themselves and the total saving in time and money is considerable.

If the building is to be of steel frame construction, separate plans should be made for this work, the solid walls being in dilute ink and the beams indicated by heavy lines. Each beam or column should have a reference number or letter, and corresponding marks should be placed on the actual parts before delivery to the job. The drawings can then be used as assembling plans.

Following the plans will come the elevation sheets, one for each external wall, in which openings of any description or other features occur, but it is not necessary to draw the whole of every elevation.

On a street front or other facade with all balanced designs one or perhaps two bays, with each and every variation, should be filled in in detail from top to bottom, the remainder being blocked in only with short notes drawing attention to the fact that it is a repetition of what is shown. To do otherwise is to do unnecessary work, as the builder or quantity surveyor measures one, the remainder he counts.

For the purpose of setting up elevations time is saved if the sheet is placed over the plan enabling the lines to be projected without redrawing. On the elevations all heights of floors, windows, doors, etc., can be figured and each opening or feature should have a reference mark so that it can be readily found on plan or on the detail sheets.

Half-inch scale details of the main facades or other portions of the building would follow the general elevations. On these should be shown the detail exactly as it is required on the finished work and in such a manner that the future full size contours can be made from them without difficulty.

Part plans of each floor or where necessary to indicate construction should be drawn at or about the assumed line of fracture that ready reference may be made to them. Notes relating to material and its finish, and such other directions necessary for the builder, should go on these sheets. The half-inch scale details should be the most important and fully written sheets in the whole set.

I have referred previously to a special detail sheet.

This should contain in elevation and plan drawn to a quarter-inch scale or $\frac{1}{2}$ -inch scale, all typical doors and windows and such other fixtures and fittings required throughout the building.

For this purpose it is not necessary to draw any one particular portion of the design, but it should be possible to determine from the various types depicted on the sheet what is intended by the architect.

The extended elevation of two or three walls of any one room might be found sufficient to indicate the class of interior finish required for the whole, notes being used extensively in explanation. The various doors and windows and other features would be included fully figured and written up, and their reference numbers or letters clearly shown.

This would complete the set—not a thing of beauty perhaps, from the pictorial point of view, but eminently suitable for its function.

Much more could be written on this subject, but I fear your time and patience would be strained to breaking point.

Perhaps some of you will not agree with many of my suggestions, such as the elimination of specifications and the one-eighth inch scale sections and the colouring of prints, but I assure you these suggestions are not wild theories but the result of actual experience, and if architects here would overcome time honoured customs and adopt them, they would find the venture well worth their while.

A vote of thanks to Mr. McCredie was proposed by Mr. R. Keith Harris, seconded by Mr. S. H. Buchanan, supported by Messrs. J. D. Moore, J. F. Munnings, G. Sydney Jones and Professor Leslie Wilkinson, and carried by acclamation. The Chairman, in conveying the vote, tendered his congratulations to Mr. McCredie.

The meeting terminated at 10.30 p.m.

COMPETITIONS

COMPETITION.	CLOSING DATE.	REMARKS.
N. S. War Memorial ...	—	Approved.
Port Said Memorial ...	31/3/23	Approved
Queen Victoria Buildings	28/2/23	Approved
Victorian National Memoriam	30/6/23	Approved

ARCHITECTS

Registration System.

The Regulations.

Mr. E. Williams, registrar of the Board of Architects, states that the Architects Act for the registration and to regulate the practice of architects, came into operation on August 1 last, and the regulations framed by the Board of Architects of New South Wales were approved by the Governor-in-Council and issued in the Government Gazette yesterday.

This Act is designed to place architecture on the same footing as other professions, such as medicine and law, and to prevent untrained and unqualified persons legally claiming to be designated architects, and practising as such. The Act makes ample provision for all classes of qualified persons who have attained the age of 21 years, and are of good fame and character, to be registered as architects.

The Act provides for a registration fee and an

annual roll fee and these are fixed at £3/3/- and £2/2/- respectively. Section 13 of the Act, under seven paragraphs, sets out the qualifications necessary for registration—a person who passes the prescribed examination, holds a prescribed degree, diploma, or license of competency, is for five years an articulated pupil or assistant to a practising architect, has prior to November 1, 1921, practised as an architect in this State as his main or sole source of livelihood, is engaged in the acquirement of professional knowledge in architecture and passes the prescribed examination, has for four years been a competent teacher of architecture. Persons to whom the last four paragraphs relate are required to make application for registration before January 31, 1923. Absence on active military or naval service by a British subject is to be accounted part of the periods mentioned.—*The Sydney Morning Herald*, Saturday, November 25, 1922.

FEDERAL COUNCIL OF AUSTRALIAN INSTITUTE OF ARCHITECTS

BRONZE MEDAL COMPETITION, 1921

AN ARCHITECTURAL THESIS ON BLOMFIELD'S "HISTORY OF RENAISSANCE ARCHITECTURE IN ENGLAND," 1500-1800

VOI

(Continued from last issue.)

Types of Plan.

In the last quarter of the century under consideration, viz., the 16th, planning underwent a change, the arrangements of which brought into being two types of plans, generally known as the E and H plans.

The following quotation from Professor Blomfield's work helps to explain this:—"When Dr. Caius built his new court at Caius College, Cambridge, in 1565, he expressly forbade the closing in of the court on the south side, lest the air from being confined within a narrow space should become foul; and it was probably on this ground that the plan of a three-sided court came into general use."

Holland House and Montacute are both good examples of the H type.

All thoughts of defence now seem to be abandoned and the more peaceable spirit of the time is well expressed by Sir Edward Phelips, the builder of Montacute House, who caused to be written over his door these words: "Through this wide-opening gate, none

come too early, none return too late."

Barlborough Hall in Derbyshire shows still another type of plan. The house this time has a small central court, this latter, however, now being occupied by a modern staircase. All the windows give a view over the open country, and, instead of providing additional accommodation by adding to the ground floor, the house extends vertically as at Wollaton, the main hall occupies a similar position to the small central court at Barlborough.

Examples are found, of course, in which the plan reverts to those of, perhaps, decades earlier. Nevertheless, the general development is clear and in Burton Agnes, Yorkshire, built at the beginning of the 17th century, is seen a plan similar to that of Wollaton Hall. The general arrangements of the principal apartment, with its adjuncts, closely resembles those which were built nearly a century before.

A change was, however, now showing itself, brought about by an increased desire for comfort.

The original purposes of the hall were being discontinued, and this change is quite apparent in the plan of Aston Hall in Warwickshire (1618-1635).

The hall still retains a central position but is used now, as already mentioned, merely as an entrance.

This change loosens the tie with a medieval past, and eventually, on the elimination of a few Gothic features, such as mullioned windows, etc., which had been retained for some time, this tie is finally broken altogether.

So much for planning.

While in the midst of the splendour and vastness of some of these great Elizabethan mansions, sight must not be lost of the fact that smaller houses were also erected in great numbers, many of which were perfect gems of the time.

In this category may be included a great number of manor houses and lesser halls of which Exton Old Hall, Rutland and Speke Hall, Lancashire, a half-timbered residence, are good examples.

Characteristics of Elizabethan and Jacobean Work.

In attempting to define briefly the chief characteristics of Elizabethan and Jacobean work, including as it does buildings up to the end of the reign of James I. (1603-1625), one is at once confronted by the fact that, during Elizabeth's reign two facts were at work in opposition to each other.

The subject of debate seems to have been on the advisability of adopting a style from across the seas or to cling to a style traditional to the mother country.

Examples of this antagonism are constantly cropping up in the work of these periods.

In the days of Elizabeth no large house was complete without its long approach and extensive formal garden. No particular example need be taken, as it was the general rule throughout the country.

In studying the elevations of the 16th century style, one of the outstanding features is undoubtedly that of the mullioned square headed windows; whether a bay or in the main walling the treatment was always the same.

The porch or entrance doorway was also the recipient of a good deal of elaboration, generally being surmounted by the badge of coat-of-arms of the family.

It is in these porches and doorways that the classic features predominate.

The gable is another feature which was given a good deal of attention.

Of a steep pitch in the smaller houses very often pierced with windows, the gable was usually dependent for decoration on the finish given to the finials and kneelers, the forms of which were of infinite variety.

In the larger buildings where there was greater

scope, curves were largely introduced, reminiscent, no doubt, of the Low Countries; these were much modified by the English workman before application.

Wollaton Hall gives some good examples of this system of decoration.

Chimneys also were dealt with in a bold manner. The forms which this one feature took are of great variety, picturesqueness often being combined with considerable ingenuity.

To pass on now to the interior.

Considerable light is thrown on to the reason for the great amount of work bestowed on the interior fittings of the large mansions of this period, when it is remembered that the entertainment of Royalty played an important part in the life of the community.

The following features occur in the principal examples.

1. The great hall retained from the medieval period; its walls were lined to a height of eight or ten feet with oak panelling, above which were arranged family relics, heirlooms, portraits of ancestors and armour.

As before noted, at one end was the carved and panelled screen and at the other the raised dais, lighted by its usual accompanying bay window. The hall fireplace was always a favourite feature and was generally of elaborate design, being carved with the coat-of-arms of the owner.

The roof was subjected to one or two alternative treatments, either that of open timbered construction or else in plaster panelling, the ribs often forming very intricate designs.

2. The great staircase is again a favourite feature. It was boldly treated with extremely heavy newels, pierced balustrading and richly carved strings.

It was usually built in connection with the hall and owes its importance largely to the fact that the chief living rooms were often placed on the first floor and therefore demanded an important means of approach.

3. The long gallery is peculiarly characteristic of the times of Elizabeth and James. This apartment was situated on the upper floor and often extended the whole length of the house. Being comparatively low and narrow, compared with its length, some relief was necessary.

This was afforded by means of room-like projecting bays, on the sides of the main gallery. Some of the houses of the time seem to have been specially planned with a view to obtaining a gallery of great length.

At Buckhurst House this apartment was two hundred and fifty-four (254) feet long and sixteen (16) feet wide.

The purpose of the long gallery has never been fully explained, but Sir Henry Wootton speaks of it as

being intended for "gentle motion," meaning, probably, dancing or exercise. Or, again, it may have developed merely by the owner's desire to out-do his neighbour as regards the length of his long gallery.

Be this as it may, no Elizabethan or Jacobean house was complete without this apartment.

As regards decoration, it was treated much after the same manner as was the hall, tapestry, however, being sometimes brought into play.

These long galleries were lighted by stone mullioned windows with leaded panes, while the necessity for warmth was provided for by means of sometimes as many as three fireplaces in the length of the wall.

4. The smaller rooms, increasing considerably in number and importance during this period, were treated with a decoration similar to the great hall, considerable skill often being displayed in their elaborate coved plaster ceilings.

The Jacobean style, one which is usually described as being a development of the Elizabethan, may be said to have come to a close towards the end of the reign of James I (1603-1625).

Renaissance architecture of the 16th century in England had little, if any, influence on ecclesiastical buildings. What influence did find its way into the churches seems to have been confined to tombs, screens, pulpits and here and there canopies to fonts. But, as far as application to the structures themselves goes, the new style was left severely alone.

The period of architecture during the past century (*i.e.*, 16th) had been largely experimental.

That the workmen had profited by their experiences is seen in their later work. So long as plain, straightforward building was required, their work was admirable, but as soon as they attempted something which they considered to be what Blomfield calls "serious art," they seem to have wandered and fumbled, as it were, partially in the dark.

The increased publication of pattern books and treatises on architecture generally points to the fact that specialisation in building had begun, but this only materialises in the work of the next century.

PART II.

Inigo Jones.

Sir Christopher Wren once expressed his opinion of building in the following words, "Little knacks are in great vogue: but building certainly ought to have the attribute of eternal, and therefore the only thing incapable of new fashions."

This seems also to have been the view held by Inigo Jones. The latter occupied a unique position in English architecture.

For years Inigo Jones stood absolutely alone. From the year 1615 until the outbreak of the Civil War in

1642, his designs were totally different from those of his contemporaries.

The following words of Walpole may not, perhaps, be out of place at this juncture, "If a table of fame were to be formed for men of real and indisputable genius in every country, Inigo Jones would save England from the disgrace of not having her representative among the arts. She adopted Holbein and Van-dyck, she borrowed Rubens, she produced Inigo Jones. Vitruvius drew up his grammar, Palladio showed him the practice, Rome displayed a theatre worthy his emulation and King Charles was ready to encourage, employ and reward his talents. This is the history of Inigo Jones as a genius."

Jones was born in July 15th, 1573, in the parish of St. Bartholomew, Smithfield and died on June 21st, 1652. Apparently only half of his long life was devoted to architecture.

In his earlier years, Inigo Jones spent a good deal of time in Italy, but his architectural career may be said to have commenced in 1615, when he was appointed by James I. as Surveyor-General of the Works.

His reputation as a connoisseur of art, probably brought him under the notice of the king, he being already commissioned by the Earls of Arundel and Pembroke to buy works of art in Italy and France.

His position at court was now undoubtedly established, but up till the year 1615, he had erected no outstanding work, if any at all, which differed to any appreciable extent from those of his contemporaries.

After that date, however, complete evidence of his genius is seen.

In the Banqueting Hall, Whitehall, the first stone of which was laid on June 1st, 1619, he struck a note previously unknown in England.

The original Banqueting Hall was destroyed by fire in January, 1619, and Jones as Crown surveyor got his chance.

While the King probably only desired a new hall, this great architect saw the opportunity of designing an entirely new palace, to take the place of the irregularly planned buildings which then comprised Whitehall.

This design was made, but owing to a low exchequer, coupled with the murmurings of a populace already excessively and unjustly taxed, nothing more of this great conception—beyond the Banqueting Hall—was ever built.

The genius of Inigo Jones, is the more clearly realized when it is remembered that this extensive design was carried out in a style, as yet, quite unfamiliar to the English people.

During the next few years, Jones' designs included those for the Water Gate of the old York House—

Charles II.'s block, Greenwich Hospital—Ashburnam House and the Church of St. Paul, Covent Garden.

One need go no further than to study the design of the Banqueting Hall to realize what a deep impression the work of Palladio had made, and also what a wonderful sense of proportion Inigo Jones had attained, during his study of that great Italian master.

As regards his own theory, concerning the noble art of architecture; to quote his own words, it should be "solid, proportional according to the rules, masculine and unaffected."

A brief examination only, of his work, is necessary to convince one that he practised his theory right to the very letter.

The principal successor to Jones was John Webb, a farmer pupil, and one who, entertaining an enthusiastic admiration for his master, followed, in his work, the examples this master had set.

While still in the service of Inigo Jones, Webb designed and erected a number of small buildings himself, but his first important work seems to have been Thorpes' Hall, near Petersborough. In this building are seen many of Webb's peculiarities in design, and, while showing that he had a fairly good grip of architectural treatment generally, as practised so ably by his master, it also proved that he did not have that "something" which was always so evident in the works of Inigo Jones. Webb died in 1674; he left ample evidence of his sound knowledge of architecture in the works at Ashdown House, Berks, Burlington House and others.

John Webb undoubtedly forms the connecting link between Inigo Jones and Sir Christopher Wren.

Little appears to be known of other architects at this time, although the names of several are mentioned.

Vertue in Walpole's "*Anecdotes*," attributes the Riding School at Bolsover Castle, to a man named Marsh, while the original house for Lord Graven is said to have been carried out by one Gerbier. The latter work however is of comparatively little importance.

The knowledge and practice of classic work was spreading in England before the Commonwealth began, but a conservative feeling for old traditions was apparently far from being dead. This was particularly the case at Oxford.

This traditional style, *viz.*, the Gothic, was however now confined, principally, to portions of churches which were undergoing alterations, additions or repairs.

In spite of these late efforts of a dying style, to preserve its existence, the Puritan ideal was rapidly gaining ground, and, as Blomfield states, "the meaning of the great Gothic churches was becoming a sealed book to the majority of Englishmen."

During the time of the Commonwealth (1649-1660) the history of architecture in England, is, apparently, a complete blank, owing, no doubt, to the unsettled state of the country at that time.

On the restoration of the monarchy, however, the art began to revive. The Great Fire of London in 1666, a few years after the death of Inigo Jones, brought into notice the talents of Sir Christopher Wren, that great master of English Renaissance.

Sir Christopher Wren.

Christopher Wren was born October 20th, 1632, at East Knoyle in Wiltshire.

As a youth he showed remarkable abilities, more particularly in the study of astronomy and mathematics, possessing at the same time, however, a considerable classical knowledge. When only twenty years of age, Wren was a fellow of All Souls and, after having been Professor of Astrology at Gresham College, London, was in 1661 appointed Savilian Professor of Astronomy in the University of Oxford.

Up to this time there had been nothing in his career to show that he was destined for the architectural profession, but in the same year (*i.e.*, 1661) he was appointed assistant to Sir John Denham, Surveyor-General of the Crown.

This event marks the turning point in Wren's career.

Pembroke College, Cambridge, built in 1663 was his first work, closely followed however, by the Sheldonian Theatre, Oxford, which was started in the same year and finished in 1668.

In the year 1665, Wren paid a six month's visit to Paris.

The French capital at this time was the centre of great architectural activity, and, according to Professor Blomfield, there was, at that time "no better school of architecture to be found in Europe."

During this visit, Wren evidently studied architecture very diligently.

Lemercier was dead, and the best works of Francis Mansard were finished, but other prominent men, including Levau, Parrault and Bernini, were all engaged on the Louvre, while other fine buildings were being erected at about the same time.

This short stay in France was not without its results, as in most of his early work, the influence of the French architects is very marked.

Wren's failure to reach Italy was, therefore, not very serious, although, as Professor Simpson says, "actual contact with the ruins of Imperial Rome and the masterpieces of Bramante, Peruzzi and Michael Angelo would probably have given his style that broader and bigger touch which to some extent it lacks."

On his return to England, Wren was occupied with a scheme for remodelling Old St. Pauls, a scheme

which fortunately for himself, "as well as posterity," never materialized, owing to the Great Fire of 1666.

Here was Wren's opportunity, one however, of which he could not have availed himself so fully, had it not been for the death of his late superior, Sir John Denham.

Wren, to use a colloquialism, "stepped into his shoes" as Surveyor-general, and hereafter the rebuilding of London rested to a great extent in his own hands.

The opening of Wren's career as an architect, was marked by what must have been to him at least, a great disappointment, *viz.*, the failure to obtain the necessary permission for carrying out his masterful scheme for the architectural lay-out of the city of London.

Great though Wren's opportunity undoubtedly was, it would have been next to impossible for him to have carried out all the work in addition to St. Paul's, if the conditions had been similar to those existing in England but fifty years before.

Inigo Jones and Webb however, had instilled a new feeling into the work of the time—a feeling assimilated probably quite unconsciously by the architects and workmen—with the result that these were practically everywhere in sympathy.

Professor Simpson when describing the state of architecture at this time, writes, "The confusion of tongues which had prevailed for one hundred and fifty years or more, was stilled, and once more men were in agreement as to what constituted architecture."

Had St. Paul's Cathedral never been built, Sir Christopher Wren's reputation would still have been great, owing to the large number of city churches as well as secular buildings which he designed.

City Churches.

In 1667 an Act of Parliament was passed for the rebuilding of thirty-nine of these city churches.

As was to be expected, Wren was appointed architect for most of them.

This task, was however, no easy one.

The sites appear to have been very cramped and irregular, yet seating accommodation was required for large congregations.

Again the Protestant ritual, on account of its simple nature, did not lend itself to architectural effect.

The churches were purely congregational and owing to lack of space, literally, every square inch had to be utilized to the best advantage.

The introduction of the gallery was a natural outcome of this—brought about by the necessity for providing adequate seating accommodation for the large congregations.

As to the interior treatment of these city churches, it is remarkably varied, due largely of course, to the irregular sites.

Wren's genius, perhaps, displays itself best in those churches mostly, either of "Greek cross plan" or approximately square, which are domed, the largest and most beautiful being that of St. Stephen's, Walbrook.

Fine as some of his interiors undoubtedly were, the general effect was almost without exception sacrificed to practical considerations, and it was on the exterior that Wren seems to have lavished most of his time and thought.

Here again variety seems to have been the essence of his work, coupled with a keen sense of proportion and delicacy of feeling. His attention was directed mainly to the towers or steeples and spires, caused probably, as Blomfield states, by a foresight of the time when most of the churches themselves would be hidden away by adjacent buildings.

In these steeples, the two which stand out as being the finest in design and treatment are generally admitted to be those of St. Mary-le-Bow and St. Brides', Fleet Street.

Stone or timber covered with lead were the principal constructive materials for these steeples, the latter being applied to St. Martin's Ludgate Hill, a beautiful example of the smaller church spires.

Wren made a few attempts at Gothic work, such as at St. Dunstan in the East and St. Michael, Cornhill, but he was no Gothicism, as these examples prove, being entirely out of sympathy with the very first rudiments of the style, with the result that his work in this direction, is, as Blomfield states, "uninspired and unconvincing."

St. Paul's Cathedral.

Fine as many of his city churches undoubtedly were, it was to the construction of St. Paul's Cathedral that Wren's efforts were principally directed.

After an attempt in 1668 to patch up Old St. Paul's, it was finally decided to clear away the old buildings, and in the following year, Sir Christopher Wren was instructed to prepare designs for an entirely new Cathedral.

The history of the building of St. Paul's Cathedral is almost too well known to need repetition, but a few remarks connected with it may not be out of place.

According to accounts, Wren was evidently greatly handicapped right at the outset by the timidity of the clergy towards his first plan, as they were evidently expecting something approaching the more sober medieval type of plan, consisting still of the "Latin cross type" with nave choir, transepts, etc.

The first plan was followed by one known as the Warrant design, which was officially described in 1675, as being "very artificial (*i.e.*, artistic) proper and useful."

This Warrant design was undoubtedly very inferior to his first plan on which he seemed to have set his heart.

Professor Blomfield offers as an explanation of this inferiority the suggestion that it was caused probably by Wren's immaturity at the time he made the design.

Be this as it may, Wren's first plan is generally admitted to be an exceedingly fine one, and it seems quite probable that the second design was prepared largely to satisfy the many and varied wants of the clergy, Wren, knowing as he did that the Warrant allowed him to make variations "as from time to time he should see proper," evidently intended, and indeed did avail himself of this liberty to a considerable extent.

This however, is rather the reverse of Blomfield's theory, which he gives in the following manner: "The variations actually made are so essential that it is almost impossible that Wren could have slipped them in without obtaining the consent of the Commissioners."

The amended plan which finally evolved, constituted what is generally known as Wren's third design and was the one adhered to for the new Cathedral.

Wren's designs all seem to have been more or less dependent; on a pre-conceived arrangement, having as its dominating feature, a great dome, to which everything else was subordinated.

As to the design of this dome, it did not attain its present fine appearance all at once, but gradually evolved after much experiment, both as regards elevation and construction.

There are two features in St. Paul's Cathedral which have been the subject of almost endless criticism. One is the construction of the great dome already referred to, and the other, the screen walls of the north and south aisles.

In regard to the former, the critics have referred to the construction, consisting as it does of internal and external domes, as being a mere sham.

Blomfield, in defending Wren's work, gives a very straight answer to these men. "It is," he says, "in the architect's discretion to choose his means of impressing the imagination, and provided he attains his result, he is not bound by pedantic criticism as to his means—criticism which assumes an intention which never existed in the architect's mind."

Gwilt refers to the screen walls of the aisles as "one of the most unpardonable defects or rather abuses, which this church (*i.e.*, St. Paul's) exhibits—an arti-

ficial fraud and an abuse which admits of no apology."

Professor Blomfield takes a milder view when speaking of these walls concealing the actual construction of nave and aisles: he says that "there was no inherent objection to showing the general constructional intention. Wren, however, conceives of his problem differently, and certainly succeeded within the limits that he set himself."

As a direct antithesis of the above criticisms, Professor Simpson states: "The upper walls buttress the supports of the dome. They also take the place of, and perform the same function as the lofty pinnacles that rise above the haunches of flying buttresses in Gothic churches. That they are continuous and not a series of isolated members, does not make them fraudulent, neither does it diminish their utility. On the contrary, their utility is increased by their solidity."

However, whatever faults this cathedral of St. Paul's may have, it still stands, excluding St. Peter's, as differing both in Europe, produced by an architect of the Renaissance.

In addition to the works of Wren already referred to, may be added those of Greenwich Hospital, Royal Palace, Winchester, Marlborough House, and a portion of Hampton Court, as well as a host of smaller works.

Sir Christopher Wren, having lived to see the completion of St. Paul's in 1715, was finally displaced from the office of Surveyor-general (a position which he had occupied for fifty years) by an incompetent pretender named Benson.

The closing words of Wren's speech on this occasion, strike a very pathetic note. "As I am dismissed, having worn out by God's mercy, a long life in the Royal service, and having made some figure in the world, I hope it will be allowed me to die in peace."

His death took place in 1723, at the age of ninety-one years and he was buried under the fabric which had constituted his greatest life-work, with words, says Walpole, "that comprehended his merit and his fame."

PART III.

Eighteenth Century Architecture.

Architectural history of the early decades of the eighteenth century is marked by the rise of a younger school comprising such men as Hawksmoor, Vanbrugh, Gibbs, Kent, Campbell and Wood. Professor Blomfield also mentions the names of several architects of the time which are practically unknown.

These include such names as Jerman, Wynne, Bell and Talman, but the works of these men, are however, of comparatively little importance and can here afford to be passed over.

The greatest of Wren's immediate successors were

undoubtedly Sir John Vanbrugh and Nicholas Hawksmoor.

As regards the architectural education of the former, very little is known. Professor Simpson states that when still in his 'teens, he (*i.e.*, Vanbrugh) went to France, but whether it was here that he gained his first knowledge of architecture is uncertain.

He very probably obtained here, however, his first insight into "dramatic composition," an insight and knowledge of which were afterwards turned by him, to such excellent account.

After having devoted the first thirty-five years of his life to literature, Vanbrugh suddenly transferred the whole of his attention and energy to the practice of architecture, and in this new sphere, designed and erected some buildings which are "without parallel in modern architecture."

These works caused a great deal of harsh criticism to be directed towards the designer, a few critics only, being recorded as having taken a favourable view. One was Sir Joshua Reynolds, who first enlightened the public upon the "hitherto misunderstood and condemned works of this extraordinary architect."

Vanbrugh's greatest works were Castle Howard and Blenheim Palace, the latter being a "monument of the victories of Marlborough, raised by a grateful nation."

The design of Castle Howard is much simpler than that of Blenheim, but both display some extremely masterful planning.

Throughout the whole of his work, Vanbrugh was seemingly governed by a desire for size and massiveness, resulting generally in a severe ponderosity, relieved only by a careful distribution of masses.

J. Alfred Gotch, in his work entitled *The English Home* gives a summary of Sir John Vanbrugh's works in the following: "Vanbrugh's houses may be taken as the highest manifestation of the spirit of the age in house-building; the exaltation of social grandeur, the scenic magnificence of architecture." That they rather missed the mark in respect of comfort and convenience as we understand those qualities, was not held to be a great drawback, yet even contemporary voices were raised in protest, as may be gathered from Pope's verses on *The Duke of Marlborough's House at Woodstock*, wherein, after listening to an admirer's description of its splendour, he suddenly interrupts him:

"Thanks, Sir, I cried, 'tis very fine,
But where d'ye sleep, or where d'ye dine?
I find by all you have been telling,
That 'tis a house, but not a dwelling."

Sir John Vanbrugh was succeeded by Nicholas Hawksmoor, who, entering Sir Christopher Wren's

office at the age of eighteen, spent the next thirty years of his life in the latter's service.

That Hawksmoor was evidently held in very high esteem by Wren, is proved by the fact that he was appointed to many responsible positions, including those of Deputy Surveyor at Chelsea Hospital, supervisor of the Royal Palace for Charles II. at Winchester, and Clerk of Works at Kensington Palace and Greenwich Hospital.

Till the end of the seventeenth century he worked entirely for Wren, but from this time on, he was associated with Vanbrugh at Blenheim, Castle Howard and elsewhere.

In 1708 a commission was appointed for building fifty new churches. Wren was one of the Commissioners and he "took good care that his old pupil got his share." This opportunity was not lost on Hawksmoor, as included in those fifty churches, St. Mary's, Woolnoth, St. George, Bloomsbury, and Christ Church, Spitafields, were all designed by this architect.

Having worked under two such men as Wren and Vanbrugh, it is only to be expected that each would have had some influence on his work, in a great or lesser degree. This influence coming from two totally different sources, can be traced in a number of Hawksmoor's works, but particularly so in the Church of St. Mary's, Woolnoth.

At this stage in the history of English Renaissance, Professor Blomfield, departing from a description of the most prominent architects of the time, together with their works, mentions the names of several men, seemingly amateurs.

Interesting as the works of the latter may be and are, they have little or no effect upon the architecture of the time, and can in consequence, afford to be passed over.

As Blomfield states, however, the appearance of the amateur was a dangerous sign.

"It was partly the cause and partly the effect of a change of direction in the development of English Art. The artistic strength and ability that had hitherto found its adequate expression in architecture and craftsmanship, was gradually drawing away into other channels, and concentrating itself in the art of painting, to the neglect of the other arts.

"England was soon to possess painters of first rate genius, but as a set-back to this, architecture fell into the hands of men of inferior ability, with the result, that tradition was abandoned for merely individual caprice."

While a lot of work was done during the eighteenth century the majority shows a certain tameness, without any flash of genius to give relief to the continuous monotony.

One or two names should be mentioned however.

Colin Campbell is best known by his publication, *Vitruvius Britannicus*, which, as Simpson says, "did for English eighteenth century architecture, what Blondel's book did for French."

Robert Morris, another architect of the time, receives rather severe criticism at the hand of Blomfield, which perhaps, is hardly deserved, when one studies such a charming piece of design as his bridge at Wilton.

The architects of the first half of the eighteenth century were numerous, but apart from the works of those mentioned, there is very little which stands out as being something really worth while.

"Limits of taste, bounded by a sound tradition, and an abundance of pattern books," seems to have prevented originality from raising its head, and it was not until the second half of the century had dawned, that architecture generally, seemed to take on a new lease of life.

Blomfield draws a distinction between the generation which succeeded Wren, and which had more or less, ceased to exist by the second half of the eighteenth century, and the next generation represented by Carr, of York, the younger Dance, and Chambers on the one hand and the Adams on the other.

"With this latter school," says Blomfield, "quite modern architecture with all its disastrous experiment begins."

The eighteenth century was but half finished when two movements were set on foot which were destined to break up the traditions which had become vernacular in the Mother-land.

The first of these is generally known as the Greek revival and the second as the Gothic.

That these revivals enjoyed such popularity is merely a proof of the low level to which architectural style had fallen.

The state of affairs in the architectural world towards the end of the century is summed up in the words of Professor Donaldson: "We are all in a state of transition: we are wandering in a labyrinth of experiments."

One architect alone seems to have had the strength to resist these new fashions. This man, Sir William Chambers, was the son of a Yorkshire merchant, and it was intended that he should follow his father's calling. He seems, however, to have had his own ideas concerning this, for, at the age of eighteen, Chambers went to France, where he worked in Paris, under Clerisseau and then to Italy, in which country he stayed for some years, studying and measuring existing buildings.

On his return to England, he was practically unknown: he was, however, fortunately for himself,

introduced to court by Carr of York. From this on, work evidently came in fairly steadily.

His greatest achievement as an architect, undoubtedly was the design and erection of Somerset House.

This building shows in concrete form, both the strong and weak points of Sir William Chambers' make up as an architect.

Dance the younger, is best known as the architect of Newgate Prison. He shows here a quality of self-restraint which, however, was later lost, as is shown by his attempts at Gothic, which at that time was little above the ridiculous.

"The four enterprising brothers named Adam"—as Britton and Pugin somewhat contemptuously style them—are the last of the eighteenth century architects, whose works and style here demand recognition.

The brothers Adam—of whom Robert was undoubtedly the most able—posed as reformers, but they did not carry their reformation very far.

Their work was always marred by a feeling of littleness, although Robert did imbue his work with a certain amount of masculinity.

The term—Adam's Style—has become a bye-word in the realm of art, and is applied, in the main to the ornamentation of features, such as chimney pieces, etc.

The Adam family did not, however, confine themselves to detail. They seemed to be ready to undertake work of any description, designing "anything and everything from a door-scraper to a palace."

The screen and gateway of the Admiralty, Whitehall, are, on the whole, the best of Robert's works.

Blomfield, commenting on the works of the brothers Adam, says: "The Adams' introduced little into English architecture of any value, but they did introduce a quantity of meaningless ornaments, and they set the fashion for cheap reproductions of the antique, and insincerity of taste from which the art has by no means recovered."

The curtain is drawn on the eighteenth century work in England by the death of Robert Adam in 1792, and it is at this juncture that Professor Blomfield closes his history of the English Renaissance Architecture in England.

The fact that such an authority as Blomfield should take this as his finishing point, is very significant.

Art, at this time, was at a very low ebb and the tide of tradition and style kept receding, till it reached the complete low water mark of the first half of the nineteenth century.

PART IV.

Adopting Professor Blomfield's method of treating his subject, it is here proposed to trace, briefly, house planning of the seventeenth and eighteenth centuries and then, to glance at the handicrafts which were

involved and practised in the work of the time.

In order to trace the development of house plan, it is necessary to go back to the times before the Commonwealth held sway.

The courtyard, which had previously been the general rule, was not finally abandoned until some time after the Commonwealth came into power. Houses of the E and H type, already mentioned continued to be built until near the end of the seventeenth century.

With the return of Inigo Jones from Italy, a plan, termed by Simpson, the "block" plan, was generally adopted.

The ground floor came to be treated as a basement only, with the result that the first floor, becoming the piano nobile, controlling the whole plan, was usually approached directly from the outside by means of a great flight of steps.

This, of course, at once rendered the traditional grand staircase superfluous, the *raison d'être* of this staircase, serving as the approach to the chief reception rooms being gone.

Tradition, however, prevented any sudden change, and the internal staircase continued to receive a good deal of attention right up till the end of the seventeenth century.

A new innovation, introduced by Inigo Jones, and reminiscent of the sixteenth century planning is seen in the provision of light courts, as a means of supplying light to the inner rooms.

Chevening in Kent and Coleshill, Berks, are both typical of an arrangement of planning, in vogue towards the end of the seventeenth century.

The plans consist of oblongs, and, in the latter, having two of the aforementioned external staircases serving the first floor, the basement being devoted to the kitchen and offices.

The next step taken in the development of planning was the adoption of a plan sometimes known as the "three-block" plan.

Blomfield credits Inigo Jones with the adoption of this type (later so largely practised by Vanbrugh, his successor) in his work at Stoke Park, Northants. Whether this type of plan evolved naturally or whether it was imported from Italy, or France (in which latter country Francois Mansard had commenced work on his chateau of Balleroy in 1626) is a matter for some debate.

Castle Howard and Blenheim Palace both present examples in this category and, while being, undoubtedly imposing, it is hard to conceive of a more costly or inconvenient system of planning.

The whole idea in the mind of the architect seems to have been the realization of a predetermined composition, totally regardless of comfort and convenience.

Notwithstanding the above faults, however, this

detached wing plan continued in use till the latter part of the eighteenth century.

The use of small internal courts for the purpose of obtaining light and air continued in use throughout the eighteenth century, but then began to lose favor, owing to an increasing fondness of top lighting which necessitated (treated, however, apparently with indifference) the adoption of a system of borrowed lighting and ventilation. This together with a seeming love for unreasonably high rooms constitute the most important modifications made by the architects of the time.

In the description of the larger houses of the period under consideration, it has been impossible to avoid passing a certain amount of adverse criticism upon the manner in which the architects of the time so often sacrificed comfort and convenience for the sake of, what they understood to be, fine architecture.

In the smaller houses of the period, this drawback is much less in evidence, not because more skilful architects were employed upon them, but because there was no necessity for a great display and again, the money was lacking wherewith to make it.

"These houses, says Gotch, seem the natural expressions of the quiet, uneventful lives led by the inhabitants, who like the Vicar of Wakefield, had no adventures save by the fireside, and no migrations save from the blue bed to the brown."

Materials.

Architecture depends for its success upon the combined results of work in a number of totally different trades. In the early days of the English Renaissance period it did in fact, embrace practically all the arts.

The physical conditions of the country had an important bearing on the architectural methods adopted. Inland transport being impracticable the builder naturally resorted to the use of a material which was close at hand, with the result that in forest districts half-timbered work was employed, a parallel state of affairs also being seen in the case of a plentiful supply of good building stone.

The carpenter, right through the English Renaissance periods has had ample field in which to practice his craft.

It is only necessary to mention here a few of the features on which the woodworker bestowed his influence and skill in order to realize the large part played by this craftsman in the building of the period.

Besides the half-timbered work, there were also the great open-timbered roofs, which lasted well into the seventeenth century; these two characteristics of the early work, however, began to die out towards the close of the century, owing to various reasons, such as scarcity of timber and the increased attention paid to building regulations in the large towns. The result was that, though good work was continued well into the

next century, the men of this calling *viz.*, carpentry, now began to specialize in details. This, of course, had its effect upon the workmen, who, while retaining all their technical skill, lost the sense of broadness which had so characterized the work of the previous century.

Panelling, another feature which was the recipient of a good deal of attention, was gradually superseded by stucco ornamentation and, as with the other crafts of architecture, by the end of the eighteenth century, architects had lost their touch of the material.

In masonry, the quality of stone available often determined the style of work, as stones of different formation require different treatment and working; in this connection, Mr. Gotch says of Northamptonshire: "Quite into the eighteenth century we find the same forms that prevailed at the end of the sixteenth century."

The masons of the Gothic periods of English architecture and also those of the early years of the Renaissance were men well versed in their trade, being in very truth, artists in stone.

Times changed, however, and the new brought with them architects with their intricate and grandiose designs and variations of the orders, while the new fashion for Greek architecture towards the end of the eighteenth century, completed the bewilderment of the mason and at length obliterated the fine sense of classical detail, once possessed by any well-trained mason in England.

Another instance of geological conditions influencing building is seen in the case of brickwork.

The re-introduction of this craft into England, was brought about partly by the absence of suitable building stone in certain countries and partly by the immigration of the Flemings into those districts.

These people had long been familiar with the brick as a constructive medium, their own country being practically destitute of stone.

Brickwork was not only employed in the walling masses but was also applied to ornamental features such as pilasters and entablatures, while chimney stacks of most elaborate design were constructed of this material.

Wren carried out some fine designs in brickwork combined with Portland stone, a typical example being a house in West Street, Chichester.

About the middle of the eighteenth century the use of brickwork for important buildings began to die out. The reason for this gradual disuse may be attributed to the stand taken by the architects of the time, who considered that it was too mean a material to employ on important works, such as those on which they were constantly engaged. The style lingered, of course, well into the next century, but the manner, as practised by Wren, has long ceased to exist.

The extended use of terra-cotta in the early days of

the Renaissance in England has already been dealt with, but mention must be made of another constructive medium, also introduced by the Italians.

Plaster work, as a decoration was used with such a freedom and mastery by these foreigners at Nonesuch and elsewhere, that it must have been a revelation to the native workmen.

These men, however, were not slow to realize its possibilities and soon they were as much at home with this material as the Italians themselves.

The only well known architect to employ plaster work in decoration to any great extent during the eighteenth century was Robert Adam, and he applied his decoration in this material, seemingly, whenever he had the opportunity.

Lead and ironwork were two other materials largely used during the Renaissance, the former for such features as rainwater heads, urns and figures for gardens and gateways, etc., and the latter for grilles, gates, fences and door and window furniture.

Both these arts (for arts they undoubtedly were) while enjoying a tremendous amount of attention during the grand days of the style, went the way of the other arts and crafts, which, more or less, all degenerated towards the end of the eighteenth century.

Architectural Literature.

Blomfield in his *History of the Renaissance* devotes a chapter to a description of the "Architectural Literature of the Seventeenth and Eighteenth Centuries."

While presenting a good picture of the state and ruling in men's minds of the architecture at that time and making intensely interesting reading, it can afford, here, to be passed over with the exceptions of one or two comments.

That these old publications largely influenced the work of the time must be admitted.

For example, Palladio's canons of proportions, which were widely studied and Campbell's *Vitruvius Britannicus*, already mentioned, undoubtedly fostered and promoted a love for the Palladian manner.

It was only when men became so full of their own importance and of the belief that the work of their time had reached the highest pinnacle of perfection in the world of art, that decay set in (temporarily it is hoped), on a style of architecture which occupied a period of more than three hundred years in the history of that land of our forefathers.

"England, bound in with the triumphant sea,

Whose rocky shore beats back the envious siege.

This fortress built by nature for herself

Against infection and the hand of war;

This happy breed of men, this little world,

This precious stone, set in the silver sea,

Which serves it in the office of a wall,

Or as a moat defensive to a house,

Against the envy of less happier lands."

Building Materials and Craftmanship

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With a limited market such as obtains in Australia, the range of goods made is naturally restricted to marketable lines. The Company, however, undertakes the manufacture of special ware to combine and contrast with architects' special building features, and to enable this to be done experimental work, more particularly in colour schemes, is always being carried out at the factory.

With the advent of steel frame construction no better exterior facing is available than glazed terra cotta or tiles. If they combine all the essential features of the ideal building the glaze face ensures a water-tight building, and at the same time keeps it free from any accumulation of dirt.

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the decorative nature of the building itself. Its lightness in weight makes lighter and thinner construction possible. One of the chief advantages of tiles is that they are fire-proof, and they can be made in almost any shade of colour.

One is often faced with the argument that the cost of tiling makes its adoption impossible for the average house-builder, and on the face of it there appears to be good ground for such reasoning. It has to be remembered, however, that the cost of facing and painting say, a wall, two or three times in the course of several years, would exceed the first and only cost of tiles, and at no time would it be as satisfactory.

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it is practically pure (99.84 per cent chemically), and is, as far as this writer knows, the only iron of such a standard commercially produced in the world.

Pure iron is almost as durable as gold. It resists the processes that make for rust and decay in an extraordinary manner. Owing to its purity, foreign substances can find no lodgment between its particles, for it must be understood that the reason that metals decay is because they are composed of particles of varying density and durability. When iron is impure foreign particles are mixed with those of the iron, and expand and contract to different degrees than those of the iron. During these expansions and contractions openings are left in the skin of the metal through which air, moisture and other destructive agents penetrate the tissue of the metal and start a process of disintegration. The fact that these openings are microscopic does not affect the matter. Rust is caused by the action of atmospheric oxygen among the particles of the surface, causing the small, isolated points, so to speak, to weather away just as the face of a rock weathers into dust under the corrosive action of rain, frost and heat.

Most strenuous tests are made to ensure that every batch of "Armco" Iron comes up to the 99.84 per cent. standard of purity. So exhaustive are they that practically every sheet that comes out of those vast mills is uniform in quality, density and durability with all its fellows that have been produced

before and will be produced after. How it is done would take too long to tell—chemical tests prove indisputably that it is done.

Some idea of what degree of durability is obtained by this uniformity of purity will be gathered from the following facts. American coastal waters, from Florida to Maine and from Lower California to Alaska, teem with the Teredo, or Ship Worm, the most destructive of marine wood borers, which absolutely riddle all wooden structures, no matter how hard they may be. This Teredo is a long, worm-like creature with a prolificness that beats anything else on earth or in the waters under the earth. It lays a million eggs at a "sitting," and as soon as the eggs are hatched the little wretches swim to a piece of wood, attach themselves, and start boring. For years all along the Atlantic and Pacific coasts engineers struggled with the Teredo, and the engineers were beaten every time. They tried concrete piles, but they deteriorated more rapidly than wooden ones, and the Teredo smiled softly and sharpened his borer. Then, one day, an engineer enclosed his piles in galvanised, corrugated "Armco" Iron Culvert Piping, filled in a grout of sand between the pile and its "Armco" sheath, and the Teredo retired from business so far as destroying pier piles is concerned.

Some years ago a pontoon in Sydney Harbour was partially covered with "Armco" Iron, other portions being coated with other makes. When the pontoon was taken up for cleaning some considerable time afterwards it was discovered that the "Armco" coating had resisted the marine growths, and was as clean as the day it was put on, while the rest of the sides and bottom of the pontoon were a veritable marine nursery garden.

At Delhi (India) a pillar of iron 99.72 chemically pure, as compared with "Armco" 99.84 per cent., has stood for 2,800 years, and is still in perfect preservation.

"Armco" Iron is an ideal material for sheet metal workers, particularly in plain galvanised and black sheet form, because of its working qualities, standing the strain of stamping and spinning to a degree altogether unobtainable from any form of sheet steel. Under the most virulent tests it does not flake, neither will the galvanising peel.

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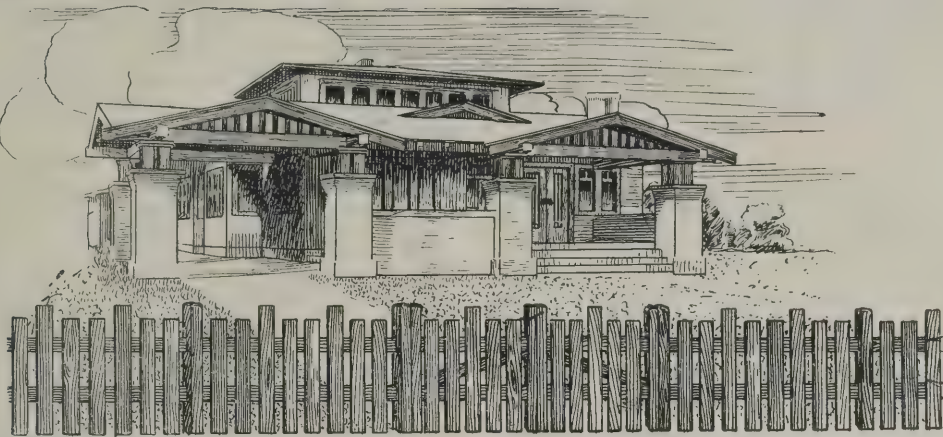
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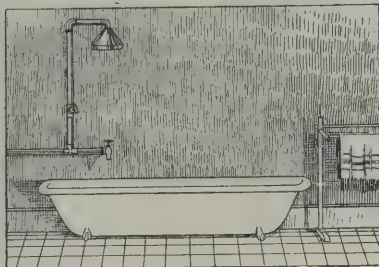


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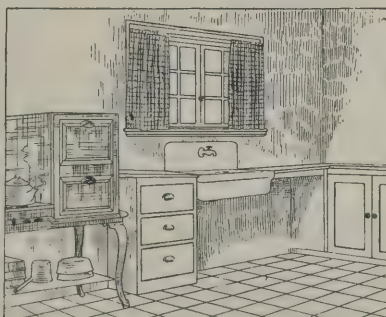


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FIRES AND FIRE ESCAPES.

The recent epidemic of fires has forced once more upon the notice of the public the necessity for adequate provision of escape facilities in case of fire.

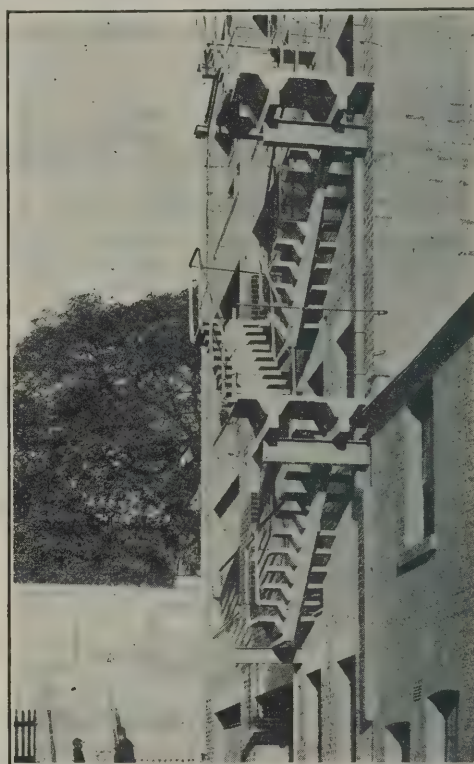
Gradually those most closely connected with fires, viz., the Fire Brigade Authorities themselves, are overcoming the careless attitude of the public generally, and the Local Authorities in particular, and out-of-date, inadequate measures are now no longer permitted. It must be "SAFETY FIRST," and the writer has lately been investigating the construction of the very latest thing in Reinforced Concrete Fire Escapes, for which many advantages are claimed over any of the ordinary types of escape stair.

The "HALO" Patent Concrete Fire Escape is now being erected with great success at a cost lower than has been known for many years. A really substantial and yet light stair is hung on either side of any building by casting in position a single centre string. Upon this string are securely fixed the specially reinforced concrete treads, to which in turn is attached any class of handrail desired.

The treads are standardised and made in the factory, being merely built up on the job. This permits of well-seasoned stocks being on hand, and the stair is ready for use as soon as erected. Architects who have already employed the "HALO" Company for their Fire Escape work, speak highly of the results obtained. It is obvious that metal heats up much more quickly than concrete, and becomes, therefore, untenable in a much shorter time.

Everyone knows that the cost of constant painting is so great that owners are very apt to neglect metal stairs when once installed, and many are the instances where it has been found that iron treads have rusted to such an extent that the stair has become positively dangerous, and worse than useless.

Concrete requires no painting, and does not de-



A Typical Concrete Fire Escape:

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This is the one reason why, although the best painters like "Velure" the second best do not. They prefer more perishable materials and more frequent repairs.

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teriorate with time. There is an entire absence of upkeep charges—a very important factor which, added to the consideration of the low first cost of the "HALO" Fire Escape, carries a good deal of weight with architects. It cannot be said that any stair hung on the wall of a building is a thing of beauty, but from an æsthetic point of view there is not that hideous unsightliness about the concrete stair that is inseparable from a metal stair. One has only to notice those already erected and compare their neat workmanlike appearance to that of the rusty-red structures of the old and now out-of-date varieties to realise this very forcibly.

The "HALO" Company is building any class of stair, in any finish, on the same principle.

The Fire Escape is made as light as possible con-

sistent with safety, and is so designed as to obstruct a minimum of light, but the every-day stair built by the Company on the same simple principle has the appearance of any ordinary concrete stair run in solid on the job, with none of its disadvantages. The

fact that the bulk of the work is done in the factory causes a minimum of inconvenience on the job—there is little centering to build, and little mess, while any desired finish is obtainable from grey or red ironite to the best terazzo.

TOWN PLANNING IN AUSTRALIA

CONTINUED FROM PREVIOUS ISSUE.

In Chapter II, he unfolds before us the mysteries of the civic survey, the varieties of kinds of towns, and "Districting of Towns."

"Before it is possible to make a satisfactory plan for either a new or an existing town, it is essential that the conditions that have to be met should be thoroughly realised. In the great majority of cases at the present time, town plans are required for the remodelling of an existing centre and its future development; and existing conditions must therefore be carefully ascertained and tabulated. This is known as a Civic Survey, and on it the proposals for amelioration and extension should be based. The same method applies to an entirely new town; but with more freedom from limitations."

It is interesting to learn from this chapter that Sir Thomas Mitchell, the Surveyor-General of New

South Wales, 1827-1855, though hampered by the already existing nucleus, laid out a continuation of William Street, Sydney, in a curved line with easy grades over the Darlinghurst ridge; re-arranged the irregular lay-out of O'Connell, Bent and Blight Streets; and planned the Crow's Nest district of North Sydney in quite an effective manner; but none of his plans were carried out. The same man was responsible for a Government Order, in 1833, that Sydney streets should be 100 feet in width. Again the work was not done and the Order unenforced. He named Park Street as the main east and west, and George Street as the main north and south thoroughfares. He suggested small intersections instead of rounding corners; he set out the alignment of many of the main roads leading out of Sydney; and advocated the reservation of play-

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grounds and parks. He was evidently an enlightened man, and Mr. Sulman remarks that had he foreseen, in addition, the need of circumferential roads to link up the extensions he evidently anticipated, his general lay-out would have made a very satisfactory basis for a modern town plan. Adelaide was more fortunate than Sydney, as it started with a good plan, consisting of a central nucleus, surrounded by a belt of park lands, with a few radial thoroughfares leading therefrom. This scheme has only to be followed out in the same spirit throughout the suburbs to make it the best planned of all existing Australian cities.

The student learns in this chapter the value of co-ordination, and how it can be accomplished by maps—maps showing the soil and subsoil as well as sub-surface water, to be used in connection with cultivation, road-making, building and health; maps showing the rainfall, winds and temperature as to how they will affect the surface drainage and the lay-out of streets and districts; graphs showing the average rainfall, the heaviest fall and its duration; of the winds, direction, force, duration and the seasons of the year in which they occur; of temperature, its maximum, minimum and average for different periods of the year.

However, that is not all that is comprised in our Civic Survey, and contour maps showing the variations in surface at frequent intervals are of the greatest value in planning a new town or subdivision. Such maps are indispensable for the grading of streets, providing drainage and locating the proper sites for buildings. Water surfaces should be shown thereon, and in an existing town the sewers, gas and

water pipes with all other services should be shown accurately on the contour plan, as variations in level have all to be provided for.

Then other plans and schedules have to be prepared in connection with traffic, showing the volume, the hours of maximum and minimum circulation of traffic of all kinds, so that facilities may be provided in advance, and congestion anticipated and guarded against. This is a most important matter, as lack of traffic facilities and liability to congestion may cost a community enormous sums in the course of a year. For instance, in a city where the average man has to spend an hour night and morning in travelling to and from his business, the average expense will be infinitely greater than in one where the average is quarter of an hour night and morning.

Then other plans should be prepared dealing with hygiene, showing the density of population in existing towns, the birthrate and infantile mortality, special diseases, and general death rates. Other charts should give details of the crime, the fires, the physique of people in different districts, so that the unhealthy sections can be discovered and improved, and the conditions that are inimical to health and morality disclosed. Plans showing the different types of housing—tenement, flats, terrace, semi-detached or detached, with the amount of open space available facilitate complete diagnosis of health conditions.

These and many others are illustrated by samples from cities in different parts of the earth, and it is made plain to the student that as soon as such a set of plans, graphs and charts is available, the information contained in them all can be co-ordinated and

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collated, so that an approximate idea can be formed of the present and future requirements of the city, even to fifty years in advance, and thus make it possible to prepare a comprehensive town plan which can be worked to steadily and uniformly through the decades at a minimum of expense and inconvenience.

This is a mere epitome of the masterly way Mr. Sulman has handled his subject. He dives into each section with the most meticulous care, wasting not one single word, summarising and condensing with masterly skill and the freedom and lucidity of one who has long studied what he has to say.

HEALTH AND TOWN PLANNING.

In dealing with this phase of his subject Mr. Sulman points out that no less than 80 per cent. of the population of England is urban, and draws attention to the still more startling fact that in a new country like Australia the urban section is nearly 50 per cent. of the whole.

This is where the health factor comes in with irresistible force. Mr. Sulman points out that in Germany (where everything was tabulated) the proportion of young men reaching the age who were physically fit to serve were 53 per cent. of the whole. In towns of over 50,000 inhabitants the proportion was 44.8 per cent., and for Berlin it was only 27.6 per cent. In Britain the case was even worse, and Mr. Sulman cites a case in 1899 when of 11,000 men who offered to enlist in Manchester only 3,000 (27 per cent.) were physically fit, and of these only 1,000 (9 per cent.) were fit for the regular army. In Australia things are not so bad, but they are serious enough and have a tendency to grow worse. The figures of the Great War were not available, excepting as regards the First Military District, of which Brisbane is the head quarters. Of the 57,673 who enlisted the rejections numbered 16,312, leaving 41,361, or 71 per cent. physically fit. But the towns of Queensland are not large, and proportionately more volunteers came from the

country than the towns. When the figures for New South Wales are available, it is anticipated that they will be considerably worse. Even on the Queensland figures the state of affairs is unsatisfactory, and will grow steadily worse as the towns increase in size, unless Town Planning is carried out to the utmost.

Congestion during work and congestion in the dwelling are the two great evils that have to be fought. All the air in an industrial centre is



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contaminated by masses of men, draught animals, traffic-raised dust, the products of combustion, and the fumes of noxious trades.

These are serious evils, and the only remedy is the scientific planning of the town, its blocks of buildings and the buildings of which the blocks are composed. Under the best of circumstances, the air of a city is prone to be stale or vitiated. The work of the Town Planner is to give the city as much fresh air as possible and also the utmost of natural light and sunshine. Sunshine is the great germ destroyer, and fresh air is indispensable to healthy life.

This involves all sorts of unexpected considerations. For instance, all buildings facing south in our continent obtain no sunlight except for an hour or so night and morning during the height of summer. For the rest of the year they are sunless. Therefore your true Town Planner absolutely bars the creation of direct east and west thoroughfares through the city.

Fresh air, sunlight and the reduction of congestion are the objectives to be aimed at in our cities are to be made healthy and kept so. While present conditions prevail the physical, mental and moral health of the town population must suffer. Working in vitiated atmospheres arouses the craving for stimulants, and the abuse of alcohol encourages

immorality, which in turn causes widespread disease which saps the vitality of the race at its very core.

Mr. Sulman quotes the case of Sweden. Ninety years ago the Swedes were threatened with the destruction of their finest qualities by alcohol. The Swedish Government and intellectuals attacked the problem resolutely, organised and controlled the drink trade, and, by the adoption of town planning, practically eliminated two evils at one stroke, after which they made the whole nation take physical training. To-day the Swedes are physically the finest people in Europe, and the town dwellers, Mr. Sulman declares, are even finer than the country folk.

As an instance of what can be done by Town Planning, Mr. Sulman instances the Garden Town of Letchworth, 35 miles north of London. The scheme was started in 1903, when a total area of 3,800 acres was purchased and 1,250 acres were laid out as an industrial town, the total population of which is limited to 30,000 people. This is less than five houses and 25 persons per acre over the whole area of the town, but in the factory section the density is about six houses and 30 people to the acre—the same as at Daceyville, Sydney. The Garden City limit is double the number, so Letchworth is not only not congested now, but never can be, as the remaining 2,500 acres are reserved for agricultural purposes for ever. In 1912 the population numbered 8,000, of whom half were the families of the workers in the factories. The death rate was of the lowest in England, and less than half that of the country districts. This proves that with proper Town Planning city life can be made more healthy than any other.

Mr. Sulman concludes a most interesting chapter thusly:—

"The whole subject of health in towns resolves itself into the question which is to be considered paramount, money or men. Our practice hitherto is well expressed by Ruskin, 'We manufacture everything there in our manufacturing cities except men. We blanch cotton and strengthen steel and refine sugar and shape pottery; but to brighten, to strengthen, to refine, or to form a single living spirit never enters into our estimate of advantages.'"

Every phase of the city and the buildings of which it is composed is treated, and the student given one of the most comprehensive summaries possible to obtain. The enormous mass of information, collected from all ages and all countries, represents the affectionate work of an ordinary lifetime.

The work is excellently indexed and can always be used as a reference book. The appendices are not the least valuable portion, as, in a way, they show the lines upon which the author developed his own wonderful knowledge of his subject. The illustrations are numerous, and the plans and graphs illuminating. The volume was produced by the Government Printer of New South Wales, and has been carried out in the manner its importance justifies.

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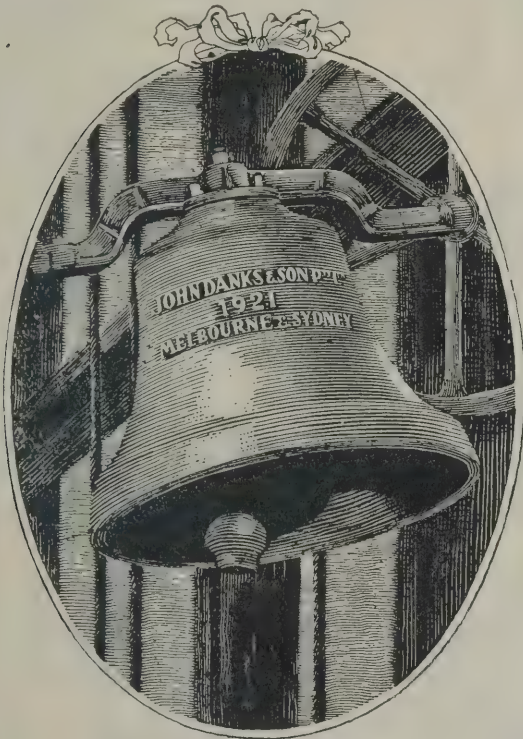
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CAMPAANOLOGY.

It is surprising to find how few people realise the large part bells have played in the history of the world. At times of rejoicing the good news has been sent broadcast by their joyous peals and they have also been used in times of great sorrow.



The mention of bells at once brings to the mind of the majority of the British race the Curfew bell. This bell was ordered to be rung by William the

Conqueror at 8 o'clock at night, when all lights had to be extinguished and the people had to go to bed. The ringing of the Curfew was abolished in 1100, but the custom is still kept up in several towns in England. From the seventh century, bells have been used in England in cathedrals, churches and monasteries. The largest bell in the world is the Great Bell of Moscow, which weighs 198 tons and is 19 feet high, the circumference of the rim being 60 feet. This huge bell was cast in 1653, but it fell down in a fire and remained embedded in the ground until 1837, when it was placed on a platform, and the interior of it is now being used as a chapel. The largest bell at present in use in the world is also at Moscow, and weighs 128 tons.

In Australia people are familiar with bells that are used in churches, schools, at fire stations, and on all occasions when it is required to send a summons broadcast over a town. Owing to the fact that the time on board a ship varies every day some method is needed to warn the crew when to go on duty, and for this reason bells are used, the time being denoted by the number of strokes given the bell.

Bell casting is a craft that cannot be acquired in a short time, but is the outcome of years of experience. Messrs. John Danks & Son Pty. Ltd. are recognised as being amongst the leading bell casters, and their workmanship has been thoroughly tried and proved. In the casting of bells the metal used is bell metal, an alloy of copper and tin, and the reason that the bells produced by this firm have reached such a high position is simply due to the fact that only the best bell-metal is used in their manufacture. Bells are made for churches, schools, fire towers, ships or any other purpose that may be

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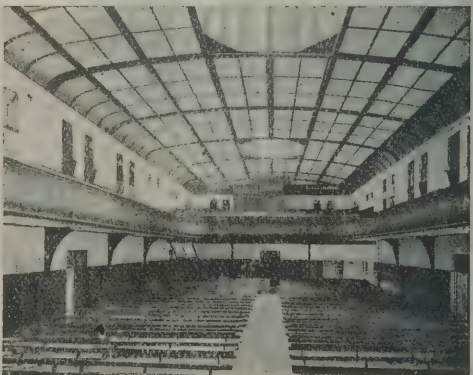
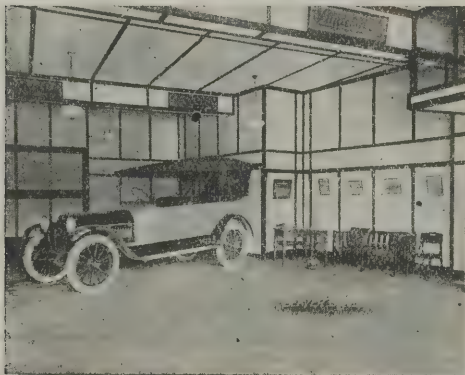
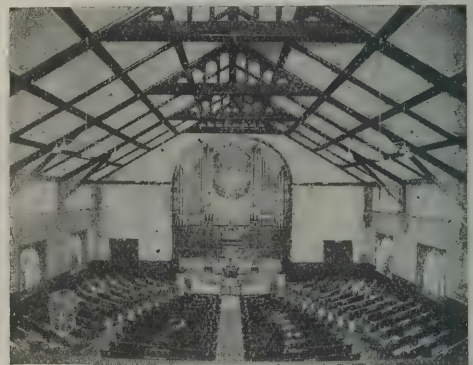
required, and large stocks are always carried. Bells up to a diameter of 20 inches may be fitted with the patent clapper and trigger designed by the firm, or they may be fitted with cast iron gudgeon, rope wheel, and gun metal bearings. A point to be remembered about the bells manufactured by this firm is that there is no duty to pay on them, and as a result they cost far less than those imported and at the same time they give at the very least equal service.

BEAVER BOARD.

The natural tendency of people to-day is to have pleasant and comfortable surroundings, both in the home and the office, and probably the most widely used means of attaining this end is by the use of Beaver Board, of which MESSRS. ROSENFELD & COMPANY PTY., LTD., 352 Kent Street, Sydney, are the

During the past few years, the business world has woke up to the fact that better work is received from employees when they work amongst congenial surroundings, and with that end in view a large number of offices have been renovated and more light has been let in upon the day's work. One of the biggest drawbacks the occupants of old buildings were under was the drab nature of the walls and ceilings, and it was by the use of Beaver Board that this difficulty was overcome, with the result that these offices are now bright and cheerful in appearance. This material can also be used with success for the making of light partitions in offices, a fact that has been largely availed of, particularly in chambers in the business centres. It lends itself to a large variety of designs.

In the erection of public buildings one of the biggest difficulties is usually finance, but when this material is employed the initial costs are greatly



THE EFFECTS GAINED BY USING BEAVER BOARD.

Top—Daceyville Picture Theatre, Sydney, before Completion.
Bottom—Salesrooms, Studebaker Corporation Ltd., Sydney.

Top—A Church Interior.
Bottom—Port Melbourne Town Hall Extension. Ceilings only Beaver Board.

wholesale distributors for this State.

In striving after beauty many people lose sight of the fact that permanency is a desirable attribute for ceilings and walls, but when Beaver Board is chosen, and many times it is selected on account of its beauty alone, this permanency is already existent. To chronicle the uses to which Beaver Board may be adapted would take up too much space, and we will confine ourselves to some of the more important aspects of the case.

reduced. The present era amongst the retail shops is noted for the excellent window displays that are to be seen, and in this direction Beaver Board holds a unique position. Its light weight, splendid working qualities and ideal surface for every kind of decoration are appreciated whenever effective displays are needed in a hurry. When it is desirable to have seasonal changes in the backgrounds of windows, the panels may be made reversible or interchangeable.

One of the most extensive uses made of Beaver Board is to be seen in the large number of suburban cottages in which the verandahs have been enclosed and airy and hygienic sleeping rooms made. By this means it is possible to turn a verandah into an extra room for the use of children, or instead it may be turned into a lounge.

The decorative possibilities of this material are unlimited. In the course of its manufacture, it goes through a sizing treatment, with the result that all that is required to make a room more decorative is a coat of paint. In securing decorative wall effects the use of stencils has been very successful, and as this method allows great scope for the individual taste of the owners, there has been a great demand for their use in private homes. In stencilling, however, the greatest good judgment is required, otherwise the work will be overdone.

Many people inhabit the homes of their fathers, and although sentiment is strong enough to make them stay in the old place they are not happy. There is no reason for this condition of things to exist, as one of the uses of Beaver Board is to make the old homes beautiful, and the operation is quite simple and well worth the expense. Happiness is always worth paying for, and happiness in a home is a necessity.

Beaver Board is a knotless, crackless, manufactured lumber, and is obtainable in board-like panels, each one being a ready-made wall section in itself. The panels have a uniform thick-

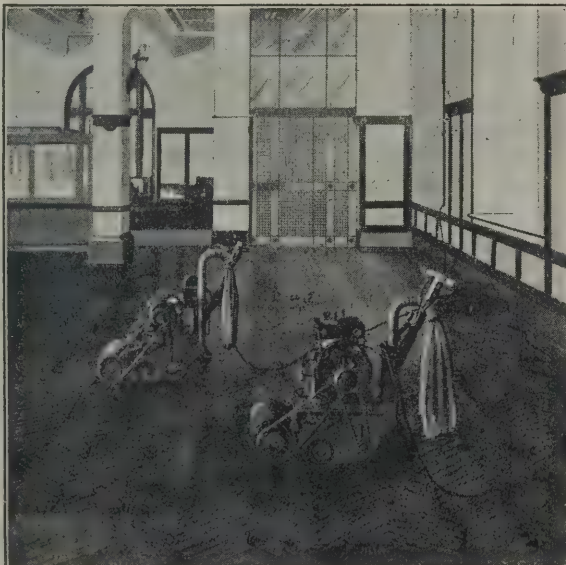
ness of $\frac{3}{16}$ ths of an inch, and weigh approximately one-half pound to the square foot. They are made in standard sizes to accord with the building custom of centering, studding and joists, and are of two widths, 36 and 48 inches, and lengths of 7 to 16 feet. Owing to its composition, it has high insulating properties, and protects the rooms of the house from severe heat, sudden cold, rain and wind. It is also fire retarding, and is an active agent in deadening sound.

The Beaver lumber camps are situated along the Frederickhouse, Buskegow, and Abitibi Rivers, Canada, where the lumber is cut and barked for shipment to the mill at Thorold, Ontario, where the logs are ground into minute shreds and meshed into long sheets or single-ply stock. This material is then taken to the finishing plants at Buffalo, New York, or Ottawa, Canada, and built up in four-ply into the final board. The board is put through a seasoning process or "plating," equivalent to kiln drying, and surface sealed and sized for moisture protection by the patented "Sealtite" process as a preventive of warping, bulging or shrinking. This process also sizes the board, eliminating the expense and uncertainty of hand priming, and insuring the finest finished results. After the final sizing treatment, the panel is branded with the Beaver Board trade mark, which is on every length of the material.

In order to maintain the superiority that already exists, the manufacturers are constantly carrying out experiments in an endeavour to improve the Beaver Board.

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ARE AUSTRALIANS TOO MODEST? A SYDNEY MANUFACTURER SAYS, "YES."

The German manufacturer sees only one viewpoint—his own; and this singlemindedness enabled him before the war to ride roughshod over nations older in manufacturing than Germany, and to go very near to dominating the commercial world. What a horror if he is still singleminded and the next generation be brought low, not under Prussian militarism, but through "peaceful penetration" in commerce.

The American is brilliantly clever—his commercial mind scintillates, he sees his own viewpoint and thoroughly understands that of his opponents; he never undervalues his enemies, so he does not give them a chance to fight him at all. He adopts a policy of "Boost! Boost! Boost! Then Boost some more." Charles Dickens pictured the American as a braggart—a windy, boasting braggart—but Dickens was wrong. When our American cousins "talk big" about their country and what they can do, they are paying us the subtlest of compliments. Unfortunately few of us recognise this, and unfortunately we Australians are poorly equipped by nature to return the compliment. When the American comes to Australia expecting to find vast empty spaces, numberless semi-savage blacks, a delightful tropical lassitude everywhere, and nothing of any importance doing anywhere; when he comes expecting this and finds instead gigantic cities and great industries, he appreciates Australia in an entirely new light.

He calculates our potentialities, gives us credit for appreciating the power of natural resources that is ours, and at once becomes jealous of "Uncle

Sam's" prestige; then his boosting begins. He doesn't belittle us, but he boosts God's Own Country so that when he leaves us we despair of ever growing big.

The Britisher is of a still different psychology. He has a glorious past and he lives on that. He made the slogan, "Made in U.K." a *sine qua non* of "perfection," and he doesn't think it necessary to recognise any trade competitors. In the past this attitude lost England a lot of overseas trade, because the British manufacturer would not deviate a hair's breadth from his conservative methods to please even his best customers, while both Germany and America went to extravagant lengths to satisfy overseas buyers. Let's hope England is now awake to the value of boost.

And what of Australia? In the past were known only imported brands of most lines. Various economic causes prevented us competing with the overseas manufacturer, and our own modesty—our disbelief in ourselves—prevented us trying to compete with him.

The war changed all that. We now are as well off economically as most other countries; we have been forced to manufacture many things which for several years could not be imported; we have found the things we manufacture good, and have begun to ask ourselves why we never thought of doing it before. Our own ability has startled us—we can hardly believe that we actually can make things and make them as well as they've ever been done elsewhere. This modesty is in Australian blood, and in the first flush of our manufacturing success we come near to blushing at the thought that "we did it." If the manufacturer is thus modest, how can

HYGIENIC

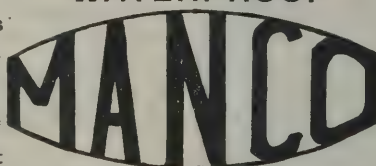
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the Australian consumer be expected to place a proper value on the to him strange device, "Australian made"?

There is one firm at least in Sydney that is not afraid to carry the word "Australian" on its label—in fact, it is by far the biggest word on their label, and they tell an interesting story of what that word has cost them. During 18 months of gruelling hard work, various suggestions have been made to them for the elimination of the word "Australian," or its modification, or the selling of their goods under buyers' labels, all these suggestions being made with a genuine view to helping them to market their lines against the popular prejudice. Their reply to every such suggestion has been unequivocally, "NO, if 'Australian made' sinks us, we'll go down with colours flying." This firm, THE THREE DIGGERS MFG. Co., of Cornwallis Street, Redfern, has at last sailed into easy waters—their goods are recognised as equal to any on the market, and in one line they have gone one better than any overseas manufacturers. This is in the Bituminous Roll Roofing section—they are turning out a high-grade, coloured bitumen roofing material in which the "colour" goes right through the fabric. Some imported fabrics are surface coloured by painting, and while new look very fine, but after a few months' buffeting in the elements the surface colour vanishes and the plain old black roof is left. "Uneek" through-colour roofing, however, is brown all the way and will always retain its lustrous appearance. In weathering properties it is equal to the best, and superior to most bituminous roofing fabrics, and we have no doubt that architects will do well to examine "Uneek" before specifying other brands of bituminous roll roofing.

We have been advised by Mr. H. W. Hobbs, 19a Elizabeth Street, Sydney, the factory representative of MESSRS. D. ANDERSON & SON LTD., felt and paint manufacturers, Belfast, that he is landing at an early date stocks of "Rok" Roofing, pure bitumen dampcourses, wood preservatives, anti-corrosive paints, etc., that are manufactured by the above-mentioned firm.

The firm has been manufacturing these articles for the past 60 years and the goods are already well-known on this market.

THE RISE IN THE COST OF BUILDING.

Quite recently it became necessary for Mr. C. R. Sweetnam, of the firm of MESSRS. C. R. & C. A. SWEETNAM, to go into the cost of the erection of buildings during the past fifteen years, and the figures which he has supplied to us throw a great deal of light upon the so-called excessive cost of building at the present time. In compiling these figures, the cost of erecting a building in 1905 was taken as a basis, the unit being £100. In the year 1906 the cost had risen to £113, and in the following year it rose again to £124, but remained at this figure for four years, that is, until 1910. The increase in 1911 was

only £1, and the same increase was apparent in 1912, and remained at £126 for the year 1913. In 1914 there was a further rise to £128, and for the years 1915 and 1916 there was no change. In 1917 there was a further rise of £2, bringing the cost up to £130. In 1918, the figures begin to rise, for in that year the increase was £11. This was eclipsed in the following year, when the cost jumped to £163, but the pinnacle was reached in 1920, when work which in 1905 cost £100 required £197 to complete.

It will be noticed that the greatest increases have occurred during the last three years for which figures are given, and this synchronises with the increase in the freight charges in timbers that were experienced towards the end of the war, and with the sudden increases in the basic wages, together with the shortening of the working hours that were also introduced.

There is a distinct shortage of houses in Sydney and the surrounding districts at the present time, but when it is realised that there has been such a large increase in the cost of erection people will understand why those who have capital to invest are very chary about investing in buildings. Already there has been a decline in the cost of building, but not sufficient to make investors rush in and put their money into property, especially when such excellent returns are obtainable from investments in Government loans.



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THE GENESIS OF AN INDUSTRY.

On February 7 a representative gathering of people assembled at the works of the Antox Syndicate Limited in John Street, Newtown, to take part in the official opening, which was carried out by Sir Charles Rosenthal. Amongst those present

and Works Superintendent, Wm. Docker, Ltd.; F. S. Hartrick, Secretary, Wm. Docker Ltd.; H. Anderson, A. Nathan, F. R. Clayton, W. J. Warneford, Secretary Antox Syndicate Ltd.; R. Phipps, B.Sc., Chief Works Chemist, Wm. Docker Ltd.; G. Rae, L. Meagher, Organiser Operative Painters' Union,



The gathering at the opening of the Antox Works.

were Messrs. Essex Picot, Chairman of Directors of Messrs. Wm. Docker Ltd. and of the Antox Syndicate; E. R. Isaacs, Director of Wm. Docker Ltd.; J. O'Geary, one of the Directors of the Syndicate

and Mesdames Picot, W. J. Warneford, Tait and Miss G. Jones.

Mr. Essex Picot stated that they were gathered together for the official opening of the works of the Antox Company, and for the information of those present he mentioned a few facts about Oxide of Antimony. He stated that Oxide of Antimony was a pigment to be used in all kinds of painting. It was not a substitute for white lead, but would do everything the white lead could do, and at the same time it was NON-POISONOUS, and the world was calling out for a pigment that was non-poisonous. It was produced from antimony ore, and for the past 20 years pigments had been successfully made from it in England and Europe. At the recent Geneva Conference it was forecasted that in seven years white lead would not be used in the manufacture of paints, and in consequence the members of this small experimental Company thought that they were the pioneers of a new industry in Australia.

Sir Charles Rosenthal, in officially declaring the works open, remarked that he was always pleased to be associated with the opening up of new industries. During the war the manufacturers had learnt that they must be absolutely self-supporting. Goods had been obtained from Japan, India and America at big prices, and to-day Australia could do with that money. He desired to congratulate those who backed their opinions with cash, and hoped before long that when the time came for the formation of the big Company the public would fall over themselves in rushing for the shares. The Syndicate was right to start in a small way, as when they developed the commodity they would have something to show and not a wild cat scheme that had not been proved. He wished the Syndicate a prosperous future.

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(OIL VARNISH STAIN)**

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Sydney and London

Mrs. Essex Picot then presented Sir Charles Rosenthal with a silver trowel as a memento of the occasion.

Mr. W. J. Warneford, Manager and Secretary of the Company, then conducted the party over the works and explained the process of manufacture.

After the completion of the inspection, refreshments were partaken of in the offices, and several toasts were honoured.

Mr. Bishop, who spoke on behalf of Mr. Morrison, gave the toast of the Painting Trade, and pointed out how desirable it was for any industry to be on the best of terms with all branches of the trade. Whitelead had been in use for many years, but Oxide of Antimony would take its place. The remarkable thing about Oxide of Antimony was that it was not only non-poisonous, but it contained excellent

healing properties also. One of the complaints caused by the use of whitelead was plumbism, and Antimony Oxide was used in its cure.

Mr. R. Meagher, replying on behalf of the Painting Trade, pointed out that his union had fought against vested interests for the abolition of the use of whitelead, and had failed; but they were now willing to fight with vested interests against vested interests.

Sir Charles Rosenthal then proposed the toast of the Company.

Mr. H. Anderson, in his reply, stated that he had recently seen the owners of the Costerfield Mine, who stated that they would stand behind the Antox Company and see that success was assured.

The last act in the official ceremony was the photographing of the gathering.

TOWN PLANNING ASSOCIATION OF NEW SOUTH WALES

Report of Council to the Annual Meeting of Members held at Government House, Sydney, on the 6th February, 1922, at 5 p.m.

The first sentence of the Annual Report last year was to the effect that 1920 had been a year of settlement and unsettlement—mostly the latter—in things commercial, industrial and social. Much the same may be said of 1921, with this exception, that settlement has fortunately been more marked than unsettlement, and notwithstanding many economic clouds on the horizon, the prospect is decidedly brighter than a year ago. To us as town planners bent on removing evil conditions of life in our cities and towns, alleviating them where absolute removal for the time being is impossible, and making active efforts to introduce better conditions in all new developments, the year before us should be one of hope and attainment, greater even than our record for 1921.

During the past year the Council has to record with much regret the loss of a colleague by death, *viz.*, Mr. P. W. Rygate, an ex-President of the Institute of Surveyors; and the recent resignation of the Hon. Secretary (Mr. Anderson) from ill health.

The Council has held its usual meetings, and Committees were formed and have met to further special efforts. With the object of interesting members and educating the public, the following discussions were held, and lectures given:—

March 2.—Address at the Annual Meeting on "New Towns for Old," by the Hon. J. D. Fitzgerald, M.L.C.

April 6.—Discussion on "The Traffic Problems of Sydney," opened by Mr. Cridland, President of the Master Carriers' Association.

May 4.—Discussion on the "Eradication of Slums," opened by Dr. Grace Boelke and supported by Miss Scobie.

June 1.—Lecture on "Parks and Playgrounds," by Reg. E. Reid, L.S. (Hon. Treasurer).

July 6.—Discussion on the "Harbour Foreshores," opened by Col. Spain, F.R.I.B.A.

Aug. 3.—In lieu of the lecture set down for Aug. 3, which had previously been given elsewhere, a special

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meeting was held to welcome Sir James Barrett, K.B.E., M.D., etc., of Melbourne, who gave a lecture on "Town Planning and Health," illustrated by lantern slides.

Sept. 7.—Lecture on "Shopping Centres," opened by Lieut.-Col. Murdoch, President of the Master Retailers' Association.

Oct. 5.—Lecturettes on the "Grouping of Public Buildings," by George Sydney Jones, A.R.I.B.A. (Vice-President); the "Location of Railways in Towns," by H. F. Halloran, L.S., F.R.S. (Vice-President); and the "Modern School in Relation to Town Planning," by Dr. Harvey Sutton.

Nov. 2.—Lecture on "Sydney," by J. J. C. Bradfield, M.E., M.Inst.C.E.

In addition to the foregoing, lectures and addresses have been given by the President at Hurstville, on the invitation of the local Chamber of Commerce, and at Newcastle, on the invitation of the local branch of the Institution of Engineers. As a direct result of the former, the President was invited to attend a meeting of Mayors and Councillors at Penrith, who agreed to form a park in that locality, and later on, at the invitation of the Mayor of Kogarah inspected the fine area of **Carrs' Bush** for park purposes. In the words of the Secretary of the Chamber of Commerce, "a great awakening has taken place in the whole district of St. George."

The President also attended the meeting of the

Australian Association for the Advancement of Science in Melbourne, presided over the "Engineering and Architecture" Section, and gave a general lecture on the "Principles of Town Planning." During the latter half of the year he also gave the Vernon Memorial University course of twenty lectures on Town Planning to about eighty students, and on the 1st of November they were published in book form.

Mr. Geo. A. Taylor also contributed a paper to the Melbourne meeting on "Town Planning and Uplift." Mr. D. L. Davidson, a Government surveyor, and member of the Association, stationed in the Northern part of New South Wales, has given a number of lectures on Town Planning during the year in country towns, and finds they are much appreciated.

Early in the year Lieut.-Col. Purdy, D.S.O., M.D., Medical Officer of Health for Sydney, and a member of the Council, sent out circulars to the different suburban municipalities calling their attention to the desirability of securing open areas while they are still available for playgrounds and parks, and they undoubtedly helped to quicken the interest of local bodies in the question, resulting in action in several cases, notably at the Glebe, Bankstown, Canterbury and the St. George district. Dr. Purdy was also one of the organisers of Health Week, giving several addresses on subjects allied to Town Planning. He

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has also represented the Council in connection with the proposed park at the Glebe, behind the Children's Hospital.

Following up the action of the President and Dr. Purdy, efforts have been made by the Council to interest municipal councils in the formation of parks and reserves in their own districts, notably the Lane Cove, Middle Harbour and the Cook's River, and though no direct result has been achieved up to date, it is hoped that continued effort during the coming year will eventuate in success. The Harbour Trust has been approached in connection with the fouling of the foreshores in certain places, and representations have been made to the Federal and State Governments, the City and North Sydney Councils, in connection with the site of the Pastoral Finance Association's wool store at Kirribilli. An endeavour has also been made to interest the Vaucluse and Bondi Councils in the formation of a cliff walk between the Lighthouse and Bondi Beach.

On the general question of Town Planning in the City of Sydney, especially in connection with the

have borne fruit, the latter object being approved, as the buildings could be more readily altered for that purpose than for a hospital. It is also gratifying to note that the buildings of the Anzac Buffet have been removed from the Domain.

At the request of the promoters of a new Great Northern Road, via Peat's Ferry, Mr. Halloran (Vice-President) joined a deputation to the Minister for Local Government, to urge that this very necessary work be proceeded with, but so far lack of funds has precluded any action. The same reason prevents many other minor improvements which the Council has advocated, amongst which may be included the transformation of a piece of market garden ground between Manning Road and Bellevue Road, Woolahra, into a children's playground.

The members will, we feel sure, note with satisfaction that the President was invited by the Government of the Commonwealth to act as Chairman of the Federal Capital Advisory Board, thus acknowledging that Town Planning should be a factor in our civic life; that he was also invited by the War

TOWN PLANNING ASSOCIATION OF NEW SOUTH WALES

RECEIPTS.				EXPENDITURE.			
	£	s.	d.		£	s.	d.
Credit Balance, 1/1/'21	£34	19	5	To Printing	£8	5	0
By Subscriptions	39	11	6	„ Luncheons	5	8	10
				„ Typing	9	6	11
				„ Hire Hall and Lantern ..	12	18	6
				„ Assistant Secretary ..	5	9	6
				„ Stamps, Stationery, "Phone, etc.	17	3	9
				„ Bank Fee	0	10	0
				„ Bank Balance	15	8	5
	£74	10	11		£74	10	11
December 31st, 1921.							
To Credit Balance	£15	8	5				

Audited and found correct.

11th Jan., 1922 (Sgd.) F. M. MASON.

(Sgd.) JOHN SULMAN, President.

(Sgd.) REG. E. REID, Hon. Treasurer.

need of a subway at Central Square, and the widening of George Street south of the G.P.O., the Council approached the late Lord Mayor by deputation, urging that the above being urgent, should be considered and dealt with, but so far without result. Application has, however, been made to the new Lord Mayor to receive a deputation in connection with the above, and several other questions of importance, amongst which the necessity of obtaining full Town Planning powers in any amendment of the City Charter, takes first place.

The representations of the Council to the Government as to the utilisation of the Darlinghurst Gaol site either for a hospital or a technical training centre

Memorial Committee at Bathurst to act as Chairman of the Committee of Judges of competition designs sent in to them; and that he was asked by the Committee of the Sports Park at Belmore to lay out their ground for them; all of which he accepted and carried out.

The only social event of the past year was a well-attended luncheon at Farmer's, at which His Excellency the Governor and Dame Margaret Davidson honoured the Association by being its guests, and to show their sympathy with our work. His Excellency's advice on that occasion, to iterate and re-iterate the truths we have to offer to the public, is one that we must always bear in mind and act up to,

if we are to make the rapid progress towards the attainment of our ideals that we desire. That we have succeeded to a very considerable extent may be judged by a remark of the Hon. George Cann, the present Minister for Local Government, to the President, that fourteen or fifteen years ago when he (the Minister) was active in municipal life, the mention of a Town Planner was synonymous with labelling him as a well-meaning but unpractical crank; whereas now it was quite the other way about, and everyone was willing to admit that there was something in Town Planning after all. It is our duty and our pleasure to convert that opinion into active effort, and during the present year it will be the aim of the Council to do so. We have many ideas under consideration, some of which may mean the expenditure of a little money as well as much time, and the Council will welcome the assistance of every member of the Association therein. One way in which members can assist is by interesting their friends and adding to the numbers of our co-workers in a cause that aims at the well-being of our fellows, young and old, without distinction of sex, creed, political faith, social position, or any of the labels that divide one section of the community from another. In fact, Town Planning is as wide as humanity itself.

In conclusion, the Council desires to express its thanks to the Minister for Education for the free use of the Library for Council meetings, and of the Assembly Hall for lectures; to the daily Press for the space given to the records of our proceedings; and more especially to our friend and colleague, Mr. Geo. A. Taylor, Editor of *Building*, and to the Editor of *Architecture* for verbatim reports of our more important lectures.

(Sgd.) JOHN SULMAN, President.

(Sgd.) REG. E. REID, Acting Hon. Sec.

THE FOLLOWING OFFICERS WERE ELECTED FOR THE ENSUING YEAR.

President:

Mr. John Sulman, F.R.I.B.A., M.T.P.I.

Vice-Presidents:

Mr. E. Milner Stephen, B.A., Barrister-at-Law, Alderman of City of Sydney.

Colonel Alfred Spain, F.R.I.B.A., Architect, Chairman of Taronga Park Trust.

Hon. Treasurer:

Mr. R. E. Reid, L.S., ex Hon. Sec. T.P.A.N.S.W.

Hon. Secretary:

Mr. Geoffrey Sawyer.

Council:

Dr. Grace Boelke, M.B., Ch.M., Convener, Public Health, National Council of Women.

Dr. Mary Booth, M.B., Ch.Edin., O.B.E., President People's Open Air Spaces Movement.

Miss Grace Scobie, O.B.E., Inspector, Dept. of Labour and Industry.

Mr. H. F. Halloran, L.S., F.R.S., M.T.P.I., Estate Agent, Licensed Surveyor and Conveyancer.

Mr. G. Sydney Jones, A.R.I.B.A., F.I.A.N.S.W.

Mr. George A. Taylor (Editor of *Building*).

Mr. J. J. C. Bradfield, M.E., M.Inst.C.E., M.T.P.I., Engineer-in-Chief for City Railway.

Lieut.-Col. Purdy, D.S.O., M.D., Medical Health Officer for City of Sydney.

Mr. F. Foster Hall, Manager to Government Housing Board.

Mr. W. G. Layton, Deputy Town Clerk, City of Sydney.

Mr. John Leitch, Past Mayor of Redfern.

Lieut.-Col. R. Seymour Wells, F.I.A.N.S.W., Architect to the Education Department.

Mr. E. H. Cowdery, L.S., ex-President, Institution of Surveyors.

Professor Leslie Wilkinson, A.R.I.B.A., F.I.A.N.S.W., Professor of Architecture, Sydney University.

Mr. John Garlick, Under-Secretary Local Government Department.

Mr. F. Cridland, President Master Carriers' Association.

Mr. J. Brownlee, A.R.I.B.A., President Architects' Association.

Lt.-General Sir Charles Rosenthal, K.C.B., C.M.G., D.S.O., A.R.I.B.A.

Major Harvey Sutton, M.D., Chief Medical Officer to the Education Department.

Miss O. Flynn.

Mr. E. Anderson.

BUILDING RECORDS.

The returns of the building operation in the city and suburbs for 1921 that were recently submitted to the Metropolitan Board of Water Supply and Sewerage showed that the number of buildings brought to completion and connected to the water supply numbered 8,537. The total outlay, including the cost of addition to existing buildings, amounted to £9,655,163.

A comparison of these figures with those for the previous year show that although 1,478 less buildings were erected the expenditure was £381,504 more. This plainly shows the higher cost of building operations that prevailed during 1921. One factor that would probably add a great deal to the ultimate cost was the introduction of the 44-hour week.

There were 10,546 buildings erected in 1914 at a cost of £6,775,548, or nearly £3,000,000 less than the cost for a smaller number of buildings in 1921.

The districts showing the greatest activity during the year were as follows:—

	New Buildings.	Outlay.
Canterbury	748	£537,591
Randwick	629	644,205
Willoughby	602	545,117
Lane Cove	317	250,225
Concord	315	304,773
Kogarah	308	219,336
Waverley	288	547,571
Kuringai Shire	286	285,270
Drummoyne	285	268,937
Rockdale	281	226,018
Ryde	271	180,977
Ashfield	248	267,360

Building Materials and Craftmanship

The whole of the information in this section is supplied by the firms mentioned.

MODERN METHODS IN ELECTRIC WIRING.

The existing methods of wiring, such as (a) complete conduit, (b) mixed casing and conduit, and (c) special "draw in" systems of wiring are generally known to all, but these systems, while possessing many virtues, nevertheless have a number of disadvantages with regard to appearance on surface work and efficiency in general use, more particularly when buried in plaster or cement.

Designers and manufacturers of engineering products are constantly devoting their attention to the production of machines, apparatus, etc., which can be as nearly as possible made into a self-contained article in the factory, so that it can be assembled or dismantled on the site near or far away, with a minimum of time and trouble by an artisan of average intelligence. The tendency also is to split the various branches of engineering construction into specialised sections in order to gain the utmost efficiency with the lowest possible erection costs.

Recognising the great room for improvement in general lighting and heating installations on the lines suggested above, the attention of electric wire and cable makers throughout the world has been engaged in evolving a system on self-contained lines, which would fulfil those requirements lacking in the older methods of wiring.

One of the firms interested, MESSRS. W. T. HENLEY'S TELEGRAPH WORKS CO. LTD., have brought the whole of their 85 years' experience to bear on this matter, and have evolved a system of wiring known as the *Henley Twin Wiring System*.

This system—generally known as H.W.S.—has, since its introduction in 1911, been increasing in favour in Great Britain and other countries, where

thousands of installations have been carried out, and is also rapidly growing into favour in Australia, where a large number of buildings have also been wired with the system.

The system consists of 600 Megohm grade C.M.A. wires or cores of various sizes, laid side by side in twin and triple form in flat section, surrounded by a tightly fitting special metal sheathing and made up in convenient sized coils of various lengths, according to the size of the wires.

The special metal sheathing is harder than the pure lead sheathing, but is so pliable that it can be set into any shape—without fracture—either on the flat or edgewise, thus enabling it to be worked in or over uneven surfaces with an ordinary amount of care.

The wires are installed in the building by being run off from an extremely light and portable drum, and secured to the walls or ceilings by neat clips or saddles, and as the commonly used size, viz., 1/.044 twin is only .232 x .360 inches, the finished appearance is neat and unobtrusive.

The system is complete with a number of accessories, such as clips, saddles, bonding clamps, junction boxes, adjustable saddles, also lead alloy glands for watertight work, and other fittings necessary to meet any phase of wiring.

The familiar method of wiring with 3-plate ceiling roses, in which twin wires run to each point, is one which reduces the number of accessories to three or four on the simple jobs. The junction boxes, which are neat and efficiently designed, have special application for the larger or more complicated installations, or in the matter of extension or alteration.

The system is designed to meet electric lighting and heating installations in every class of building,

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new and of long standing, and of every method of construction, and although the system is an excellent one for surface work, it can be efficiently and readily applied to new buildings by devising a scheme or layout of wiring before the building is constructed.

Provision for the H.W.S. wires can very easily be made during building construction in the form of camouflaged surface ducts in corridors, or the wires may be laid behind skirting boards, etc., thus eliminating a totally "buried in" installation, which is in many ways unsatisfactory from a point of view of extensions, alterations, erection and condensation troubles, etc., which lead to "faults" in the future and which cannot be rectified without inconvenience or damage to the decorations.

THE PERFECTED PAINT.

After a long absence from the Australian market, "VELURE," that universally known and used enamel paint, is again receiving the support of those people who have a taste for beauty of finish. "Velure," being able to withstand the severest exposure to sun, dust, and wet weather, and particularly chemical elements, is now finding a place in works carried out in various suburbs where the sea air is met with. "Velure" is unaffected by the sea air, and being a leadless enamel, lasts for years longer than any other painting material produced.

"Velure," being used entirely for the enamelling of all the Sydney trams, is a guarantee of the service "Velure" will give, as no material is subject to more wear and tear than the Sydney trams, and there is no other material that can compare with "Velure" for lasting and highly finished appearance, and no varnish is required, as "Velure" is a product that supersedes varnish.

Being used also by the Hotel Australia management as the enamel finish for their high-class establishment is also a guarantee of the wonderful effect "Velure" gives combined with durability.

Works too numerous to mention could be quoted but for lack of space, but it can be said that all works such as public buildings, schools, hospitals, sanitary buildings, confectionery works and food preparation factories, and particularly any premises where chemicals are made or used, and all modern dwelling houses will find that there is nothing to equal "Velure" for finish, sanitation, and wear.

It has been proved that "Velure" lasts longer than any other paint made.

DAYLIGHT LAMPS.

A new departure in the manufacture of incandescent electric lamps is marked by the Royal "Ediswan" Daylight Lamps.

It is a well-known fact that objects, especially coloured ones, when observed under artificial light

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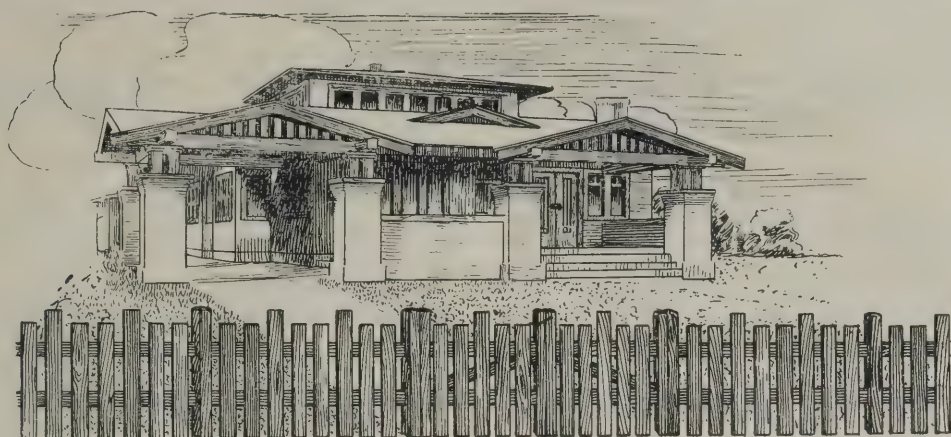
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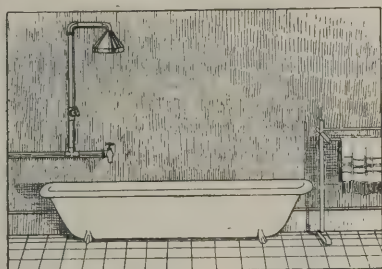


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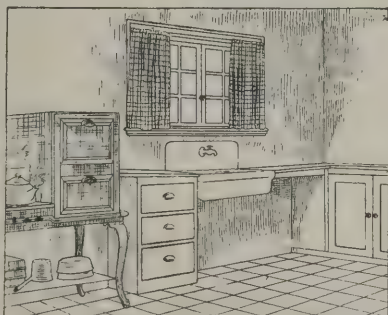


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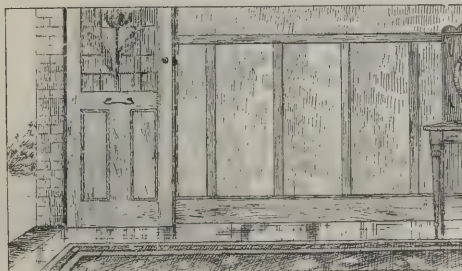


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and daylight, present a very different appearance. This is due to the fact that the composition of the coloured rays in most artificial light is not present in the same proportion as in daylight.

By using a bulb of a special colour glass, the red rays emitted by the filament are almost wholly absorbed.

This lamp is well suited for general use. In most other daylight devices accessories are required, but as the Royal "Ediswan" Daylight Lamp is a complete unit in itself, no such accessories are needed. All that is necessary is to replace the clear glass lamp previously used with one of this pattern.

This lamp has been found invaluable to artists, dyers, textile manufacturers and for shop lighting, where accurate matching of colours is essential.

The lamps are made in powers to suit all requirements.

FIRE PRECAUTIONS.

Architects in this country are true Australians, always eager to push the products of this country, and therefore information of the activities of Australian manufacturers is always of interest to them, particularly when it deals with their own profession.

The firm of Messrs. Wormald Bros., fire engineers, report that the fire door section of their works is particularly busy at the present time, completing an order for 32 double sliding doors for the new Commonwealth Ordnance Stores at Leich-

hardt. In addition to this, they are supplying a large number of the ordinary automatic armoured doors for openings in the party walls.

Recently the firm completed the order for the whole of the hollow metal window frames for the Terminal Grain Elevator at Glebe Island. They are at present busy making the whole of the steel window frames required for the new building of the Commercial Banking Co. of Sydney, Ltd., the ground floor windows of which will have applied ornamental work.

Recent modifications in the Melbourne Building Regulations require all buildings with exposures in congested areas to have steel window frames, and as a result the Melbourne works of the firm are particularly busy.

During the past few years very few buildings requiring steel roller shutters have been erected, and this department has suffered in consequence. Nevertheless a fair number have been turned out, principally in small quantities, and recently fourteen shutters were supplied to the Tasmanian Government, while twenty are in hand for Messrs. Myers, Pty., Melbourne.

Not many buildings requiring strong-room doors have been erected recently, but where these doors are required to be fire-resisting without being burglar-proof, the standard pattern, built on the Underwriter principle, continues to meet with approval, at about half the cost of the burglar-proof.

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bottle is the same size as the illustration and is fitted with long cork with quill for filling pen.

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The increased values of all stocks and the difficulty in replacing, accompanied by an increase of 10 per cent. in the discount allowed by the Fire Underwriters, has kept the "Grinnell" Sprinkler and Fire Alarm System Department very busy. This system has, to its credit, extinguished over 218 fires in Australasia, with an average loss of about £100, and as the installing of the "Grinnell" system in conjunction with chemical fire extinguishers and the direct fire brigade connection, now enables the insured to cut the cost of fire insurance nearly in half, architects are being asked by their clients to make provision for the system and the elevated tank tower which usually constitutes the secondary water supply. Every installation must be fitted up in accordance with the Fire Underwriters' Rules, and if architects consulted the firm in the early stages of planning, economies in construction to suit these

rules can frequently be pointed out. At the present time the firm has seventeen contracts in the course of erection throughout Australasia.

STANLEY PRODUCTS

Under modern educational systems everyone is familiar with the set square and the compass, but the layman has no conception of the large variety of scientific instruments that are in use throughout the world. To the architect, the engineer and all professional men who deal with figures, the Slide Rule and the Fuller Calculator are simply instruments which they use in the ordinary routine of their various professions. But to the lay mind these instruments are weird and uncanny. To see an expert doing complicated mathematical calculations simply by sliding one wooden rule over another and immediately finding the answer, is beyond his comprehension. Even to those with mathematical knowledge, the first attempts at using this instrument provoke amazement at the simplicity with which complicated formulæ can be worked out. When the layman comes in contact for the first time with the "Fuller Calculator" he is bewildered. This instrument is claimed to be the most efficient in the world for calculating percentage costs and proportional values. In consideration of this it therefore finds a place in the offices of all architects and engineers who conduct their businesses on the most modern principles.

These two instruments belong to the long line of articles that are manufactured by Messrs. W. F. Stanley & Co., Ltd., London. The agents for this firm in this State are MESSRS. FAIRFAX & ROBERTS, LTD., Hunter St., Sydney, who have a special department known as the Stanley Department. There they have on view the multitudinous products of this house, whose name is known throughout the world where scientific instruments are used.

The activities of Stanley's are not, however, confined to the manufacture of instruments. To the architect, engineer and draughtsman, the high quality of Stanley Inks and Papers have been proved beyond doubt, with the result that where good, lasting drawings and plans are required, these inks are used.

PAPER MEANS MORE KNOWLEDGE.

The student of architecture is familiar with the structural beauties of early Greece, but for his knowledge he must rely to a great extent upon

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pictures that have been built up out of the damaged ruins of the buildings of that time. In contemplating those ruins the majority of students do not realise what has been lost to them, simply because at that time no paper was in use. The building of the Pyramids is a mystery, but if the early Pharaohs had had paper on which to draw their plans the information would have been carried through succeeding generations to the present day. It was the absence of paper or some material by means of which the scribes of old could record the wonderful processes of their days that has been responsible for the slow progress of civilisation. The Cretans of old had some method of treating bronze by

which bronze swords could cut through the iron shields of their enemies. To-day it is impossible to use that treatment. The secret has gone with time. Had there been some material upon which the engineers of those days could record their formulæ, the world would be a great deal richer in scientific knowledge. With the introduction of paper and drawing materials the world has progressed by leaps and bounds simply through the dissemination of knowledge. The architect and engineer of to-day when he draws a plan is leaving behind him a record of his generation for the people of the future to study and improve upon.

When the architect understands this fact he usually ensures that the papers he uses are of the best possible quality. Under those circumstances he cannot do better than use the papers manufactured by Messrs. Allott, Jones & Co., Ltd., of Liverpool, England. This firm makes cartridge papers, detail papers, tracing papers and tracing linen of various grades for all classes of work. They can be procured in this State from MESSRS. W. E. CRAVEN & Co., of 5 Hamilton Street, Sydney.

In addition to these lines the firm also supplies Ferro Prussiate and Ferro Gallic printing papers and printing linens.

After the architect or engineer has completed his plans they usually require blue prints and helios, and if these are to be done successfully, those firms who specialise in this kind of work must have the best printing papers. The above-mentioned firm carries large stocks of Ferro Prussiate and Ferro Gallic printing papers and printing linens of the highest quality for this class of work. These papers, known as "Globe Brand," are made in Australia and are guaranteed to be fresh and of good quality.

PLAN REPRODUCING.

In all walks of life the "Diggers" are settling down to work after war experiences, and in the majority of cases they learnt many lessons that have proved of advantage. The Zero Hour, the time from which attacks upon the enemy were regulated was known to all men, but the main advantage that has been derived from this constant watching of the clock is the knowledge that everything depends on time. To be successful a man must keep to time.

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His appointments must be kept at the appointed time; and through the experiences of war, this fact has been brought home to those who saw active service. It is only to be expected, therefore, that in classes of work where ability to execute work by a specified time is necessary the "Diggers" should shine.

In the preparation of plans, architects and engineers are often rushed for time, and blue prints and helios have to be secured with the minimum of delay. That is the reason why the firm of MESSRS. ALLDRITT & ALLDRITT, Bray's Buildings, Martin Lane, Sydney, claim that the main feature of their plan reproducing is the speed with which the work is done. It must be borne in mind, however, that the firm in no way sacrifices correctness of detail and expert workmanship in this desire for speedy work.

A most up-to-date electrical plant has been installed for carrying out all kinds of reproducing work, and clients can be assured that their plans will be faithfully reproduced.

The firm also undertakes to do all classes of tracing work for engineers, architects or surveyors, should any members of those professions be rushed with work at any time.

SAFETY FIRST IN GLASS.

Glass has come to be regarded as one of the necessities of life, and it is questionable what we

would do without it; yet under certain conditions it can be almost as dangerous as a sharp knife in the hands of irresponsible persons.

It is a very useful servant, and when conditions are normal it is a utility of the greatest convenience, but when accidents occur causing glass to break and slivers and splinters to fly through the air, human life is endangered. Many a death and many a serious wound has resulted from flying pieces of broken glass.

Serious consequences are especially to be feared from the accidental breaking, in collision or otherwise, of tram car doors and windows, automobile windscreens, glass machine guards, and the numerous other uses to which glass is put at the present time.

Science, however, has come to the rescue with a laminated glass consisting of two sheets of ordinary glass between which is interposed a thin sheet of pyroxylin plastic. Hydraulic pressure and the application of the proper degree of heat welds the glass and pyroxylin sheet together into a solid unit. The pyroxylin binding prevents any scattering of fragments in the event of violent breakages.

The transparency of the glass is reduced, but $2\frac{1}{2}$ to 3 per cent. by the insertion of the plastic sheet. This would never be noticed by the ordinary person not especially looking for a difference.

If life and accident statistics were consulted to get a record of the vast number of accidents in the aggregate resulting from broken glass, it could

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readily be shown that the increased first cost of laminated glass to be used in exposed places where experience has shown that accidents are most likely to occur, would be more than off-set by saving in deaths and injury insurance payments, loss of wages due to lost time while recovering from wounds, and damage to property. Then, too, the suffering and disfigurements caused by cuts should be considered.

Laminated glass has its place in the world, and as its virtues become known it will undoubtedly be specified in many industries in which it is now unknown.

AUSTRALIAN TIMBERS.

Architects and builders in Australia are just beginning to realise the beauties of the native timbers, and in consequence there is an ever-increasing demand for those suitable for buildings. The State Timber Yards use large quantities of Australian timbers at their works every month. In view of this growing desire for native timbers it is reassuring to hear that, unaccompanied by the general limelight that usually surrounds the activities of Government departments, the Forestry Commission of the Lands Department is steadily carrying out afforestation.

At the present time there are still some 11,000,000 acres of land in this State containing timber supplies

of commercial value, and out of that area 8,000,000 acres are controlled by the Crown.

In the past, in many cases, the timber country has been devastated simply because the owners desired to clear it for cultivation, and the timber cut down, was burnt off. This short-sighted policy of the past is now being overcome, but it means that the work of reafforestation has been made more difficult.

The work of the Forestry Commission is more in the direction of providing for the needs of posterity, and at the same time a big commercial asset is being provided for the State. The biggest handicap against the proper carrying out of the work is the lack of funds and, considering that the policies of the Governments of the day appear to be confined solely to the matters of this generation, it is not to be wondered at that work which will only benefit future generations obtains little sympathy when estimates are being prepared.

Now that the people of this country are beginning to lose the prejudices that they held against articles manufactured locally, it is only to be expected that the desire for only home-made articles will spread in all directions, and before long the Australian timbers will come into their own for building and industrial purposes. The Forestry Commission are quietly preparing for that day, and their energies are therefore to be commended.

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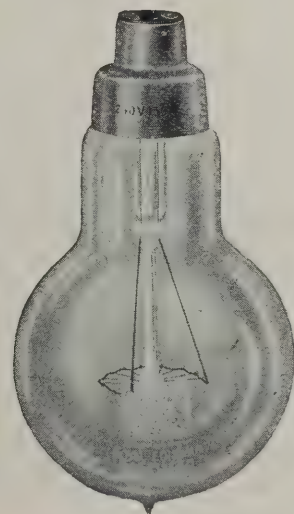
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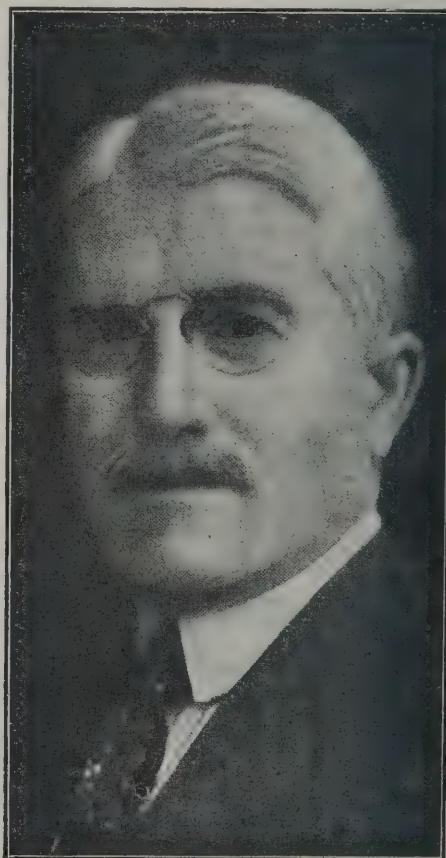


AN APOLOGY AND A STORY

We are authorised by MR. R. C. PHILLIPS, Secretary of The American Rolling Mill Co., Ltd., of Middleton, Ohio, U.S.A., to apologise to the Architects and Builders of New South Wales for his failure to call upon them personally and individually. The first day that Mr. Phillips set foot in Sydney he was incapacitated by a very unfortunate accident, which confined him to his bed for such a length of time that when he could set his foot on the ground he had to catch the first steamer to the Orient, where he had definite engagements to meet, involving very huge and important contracts, and where his presence was indispensable.

In this, and all other countries, the product of The American Rolling Mill is known by the

familiar term of "Armco Iron." The story of its evolution is one of the great romances of industry. It is the greatest of the independent iron works of the U.S.A. and the world, with a capital of 41,500,000 dollars to-day, and assets of a value of,



George M. Verity, President

approximately, 50,000,000 dollars—all made from an original capital of 300,000 dollars, subscribed just over twenty years ago.

The originators of the idea were Messrs. George M. Verity, now President of the company, and Mr. R. C. Phillips, who has always held the position of Secretary of the corporation. They went into

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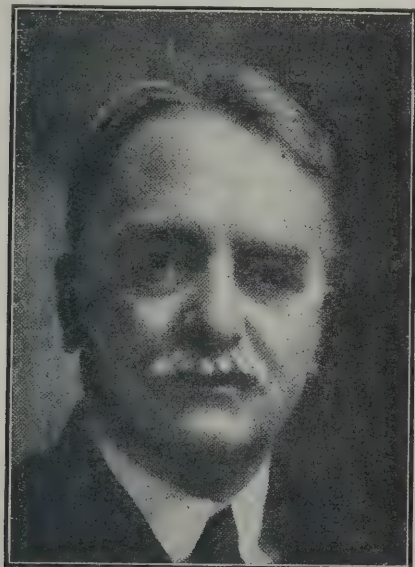
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the business when the reputation of galvanised iron had sunk to the bottom of the commercial barometer, and had utterly lost its reputation—a period that just happened to coincide with the beginning of the reputation of open hearth steel.

The two young men were determined on one thing, and that was that they would use the capital Providence had given them to produce something absolutely special on world-wide lines. They were mere youths at the time and, naturally, full of



R. C. Phillips, Secretary

ideals. They were both iron men and, naturally, their mentality followed the line of least resistance, so after long discussions and the expenditure of unlimited brain sweat, they decided to concentrate upon the production of the nearest approach to chemically pure iron.

In those days it was a very far-off dream, for, curiously enough, the purest iron was not produced in the Occident. The Orientals had achieved it centuries before, and these two youths, steeped to the lips in the history of their craft, quaintly, quixotically, figured it out that, judging by what they knew of the pure iron of the Orientals, the Bessemer steel of their day was very faulty as far as endurance and longevity were concerned. They realised that just as steel had its part to play in the world, so had pure iron, once the world's public realised it. Everybody was producing steels of some sort—nobody was producing chemically pure iron—and they said to themselves that, in the realm of pure iron, they had the world to themselves.

So they concentrated on the nearest approach to chemically pure iron, little realising the difficulties they had to surmount. Fortunately for them, the Government of the day was out to secure the production of rust-resisting metals, so they received a small modicum of Government support, which enabled them to delve deeply into the chemical side

of the vast problem they had so innocently taken on.

The first years were periods of doubt, distress and disappointment. They had only one saving grace, the special sheets produced by them laid right over all the other sheets produced either in the U.S.A., or abroad, and while they cursed themselves for brainless asses their customers were increasing with terrific rapidity, every week threatening to overwhelm the factory. The story of their curiously mixed doubt and slowly growing success would fill this volume. They prided themselves that they were the best in an unsatisfactory world, and all their profits, bar bare living expenses, went into the development of the laboratory side of the business. They had stumbled on to the delightful stage, where they were The Best. The fact that they knew their own shortcomings was an asset, as it continually spurred them on to deeper research, with the result that to-day they own the finest research laboratory on a single subject in the world.

Very early in their career they found that meticulous care of the raw material was the foundation of success. They followed up the ideal and, to-day, their methods are being followed by all their admirers and rivals.

Small wonder, either, when you consider that they are operating 32 sheet mills, and have recently added

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to them by the purchase of the only other rival organisation—the Ashland Iron and Mining Company of Kentucky, a corporation which owned the finest iron deposits in the North American Continent. This little transaction represented an immediate outlay of 500,000,000 dollars.

To sum up, the "Armco" organisation is producing the finest "refined" iron that the world has knowledge of. Since their first inception the now great works have never had a strike, nor a lock-out, for the simple reason that the originators realised from the first that it is impossible to produce a silken purse from a sow's ear, which is why the Company spends 30,000 dollars (£6,000 at normal exchange) every month on the special "Employees' Welfare Department," by which the Company first makes good men, the good men who have to produce the best sheets.

It is a fairy story of industrial life and, as in all fairy stories, they waxed exceeding great and lived happy ever afterwards!

Mr. Phillips handed the writer a beautifully illustrated history of the great enterprise, and, when occasion permits, we shall give our readers portions of the enchanting story of gigantic effort and phenomenal success contained in its pages.

The present story is the most scanty of epitomes!

NEW SOUTH WALES BUILDING LAW.

New South Wales Building Law is not one of those measures famous for its crystal clarity. It

was originally a part of the Local Government Act of 1906, which, being found obsolete, or, rather, inadequate, was reinforced by the Local Government Act of 1919, which has again been amplified by Ordinances 70 and 71.

This book, "New South Wales Building Law," is the joint product of Messrs. R. J. Browning, Barrister-at-Law, A. R. Bluett, Solicitor and Secretary to the Local Government Association of New South Wales, and James Peddle, F.I.A.

The compilers do not attempt to teach the lawyer his law, nor the architect his art; neither do they proffer advice to the builder as to how he shall carry out his job; they merely present a carefully worked out, co-ordinated and annotated list of all the regulations that have to be observed by those who erect any sort of buildings.

Such a work was very badly needed indeed, as the regulations governing building and construction are scattered through a number of difficult and intricate Acts, Regulations, By-laws, etc., any one of which may be overlooked by even the most careful.

The value of such a work depends upon the skill and efficiency with which the work of co-ordination and annotation is carried out, and it is hard to imagine men more suited for the difficult task than the three who actually carried out the work. Mr. Peddle, F.I.A., was formerly Secretary of the Institute of Architects of New South Wales, and he and his associate, A. R. Bluett, were members of the committee that framed the Ordinances, and therefore should be among the best authorities as to exactly what was intended to be essential according to the letter and spirit of the Ordinances.

This information has been carefully co-ordinated, annotated and collated by the authors of this book, with a wealth of explanatory notes, diagrams, and an index. The work teems with cross references, which facilitate the following to the bitter end of any matter in doubt.

It is not too much to say that in the very near future this volume will have established itself as the reference book *in excelsis* as regards building in New South Wales. One can only wonder at the love of work, the enthusiasm of a hobby, the devotion to a cause, that has inspired men to wade through the dreary wastes of research, the deserts of co-ordination, to produce the book that now lies before us.

It would be a perfectly legitimate criticism to say that the writer has not had sufficient time to examine the book, as to write a truly comprehensive review of such a work would take at least six months' hard reading, careful study, and correction of deductions. Still one can grasp from the bewildered study given to the volume from Thursday night to Monday morning that it has been prepared with the most meticulous care by men who understand their subject.

More than that, no man can say! It is a vast and tangled subject, and the first sign of lucidity the writer has seen about it, is in this work. The layman can follow it!

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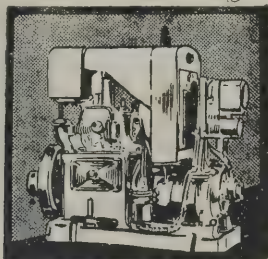
Building Materials and Craftmanship

The whole of the information in this section is supplied by the firms mentioned.

MODERN DOMESTIC COMFORTS.

It has long been recognised that electricity supplies the best light and power, and those people who are able to link up with a central power station are doing so as fast as connections can be made.

In the past the man in the country, however, had not the opportunities for securing electric power, and therefore he had to do without the blessings that the use of electric power has brought to the more fortunate habitants of the city. Now there is no need for the man in the country to do without the services of electricity, as by installing a Plix petrol electric and power set, he can bring this modern comfort to his own home.



The Plix Light and Power Plant.

The amount of time and money that a Plix petrol electric set will save for the man on the land is beyond description. There are so many different uses to which the power produced can be turned that they could not all be enumerated in this journal owing to the great amount of space required. It can supply light for the dwelling, for the farm, garage store, hotel—in fact, everywhere that light is

required. Power can be supplied for the many household duties that in many cases are the reason for the large number of prematurely aged women that are to be found all over the country. Its energy can be applied to numerous household machines, such as sewing machines, washing machines, irons, fans, etc.

The machine requires very little care, and is economical to run. It forms a complete, compact electrical light and power plant, that can be installed anywhere.

Another boon that modern invention has brought to give comfort to the householder of to-day is the Ideal hot water supply. The medical profession have always preached the doctrine that one of the surest ways to prevent sickness and disease is by the unstinted use of hot water, both for bathing and general domestic purposes. The sermon of the doctors is now bearing fruit, and to-day there is an ever-increasing demand for an efficient hot water supply.

The "Ideal" boilers were introduced into Australia owing to the demand for a reliable and economical hot water supply, and since their first appearance on this market, their success has been very pronounced. In addition to supplying hot water for domestic purposes it is possible to thoroughly heat any premises by using either a two-column radiator or a wall radiator. The largest size of two-column radiator has a heating surface of 150 square feet, and they are obtainable in various sizes. In some parts of the State the water used contains quantities of foreign matter, which cause rust or corrosion. The effect of this is that the water is discoloured and is unsatisfactory for domestic purposes. This

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A properly equipped BATHROOM is the most efficient safeguard against disease, including the dreaded plague. Our fittings enable one to maintain the bodily cleanliness and hygiene so necessary to preserve effective resisting power.

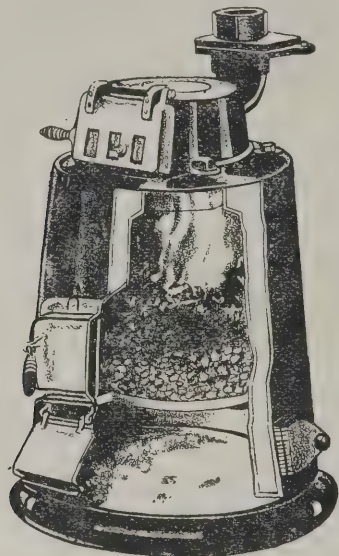
Enamelled Baths, Pedestal Pans and Seats, Cisterns, Lavatory Basins, Bath Mats, Tiles (for walls and floors), Bath Heaters (gas and fuel.)

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trouble has been totally obviated by the introduction of the new "Bower-Barffed" or Rustless Ideal Boiler. The boilers are very convenient and always ensure that there is always an adequate supply of



The Ideal Boiler.

hot water. It is very simple in operation, and in order to maintain a uniform temperature, and to prevent overheating of the water, the draught doors are automatically regulated. The Ideal Boilers are

made in five sizes, the three largest ones being fitted with sylphon regulators.

In cases where it is advantageous to combine the three duties of cooking, heating and hot water supply, the firm can supply the "Ideal Cookanheat," which carries out all these duties.

There are many other interesting points about the Ideal hot water supply contained in the handbook of 20 pages issued by the firm.

A description of some of the household comforts that are supplied by this modern house would not be complete without some reference to the "Sanitary" Refrigerating Machine. By means of cold storage it is possible to keep the daintiest delicacies in perfect condition during the hottest weather. Without cold storage it is impossible to keep milk for more than a few hours in the hot weather, and in hospitals and hotels the value of cold storage has already been proved. The ordinary ice chest has filled the breach for many years, but it is well known that the temperature of the average ice chest during the hot summer days cannot be kept lower than 50 deg. to 60 deg. Fahr. with ice. Mechanical refrigeration is therefore necessary to keep the temperature down to a point where foods will be kept fresh and sweet. It is also generally admitted that the ice chest is very unhygienic, as it cannot be kept in a sanitary condition so long as there is a continual melting of ice. Mechanical refrigerating has been proved to be the ideal method for cold storage, but

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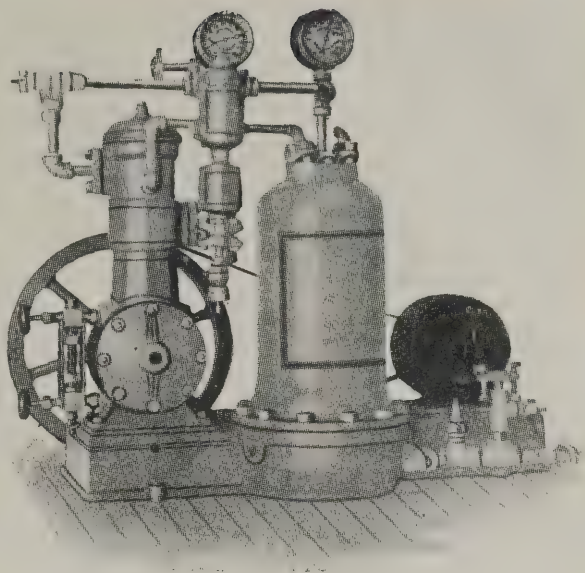
in the past it has always required someone in constant attention to adjust and watch the machine. Before the advent of the "Sanitary" Refrigerating Machine, there have been only large plants, such as are installed in breweries, cold storage houses, large dairies, etc., where expert help can be afforded.

The "Sanitary" Refrigerator is made small enough to place in the home and in stores where refrigeration is needed, at a price that everyone can afford. The machine is electrically operated, and when used in conjunction with any substantial and well-insulated refrigerator or cooling room, will produce and maintain a uniform temperature for perfect refrigeration, regardless of any natural outside variations.

The temperature is controlled by a thermostat in the refrigerator or cooling chamber, which starts or stops the machine, according to the temperature desired. In this way uniform temperature is maintained. The only attention that is necessary is the occasional replenishing of the lubricating oil and the renewal of the ammonia supply.

It is possible to make ice in moderate quantities with the machine.

Careful tests, computed by the makers, on the basis of daily operations, show that the saving is over 90 per cent. of the cost of ice at 1d. per lb. The cost of operating depends on the cost per unit of electricity.



The Sanitary Refrigerating Machine.

An important and valuable feature of this method of refrigerating is the elimination of moisture. The result is dry refrigeration, which means that the foodstuffs will keep in perfect condition and will not be contaminated.

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SUPER-FLOOR is a thoroughly seasoned wood-covering which is attached to the surface of your existing floors. It is the most artistic, hygienic and economic floor covering obtainable. We absolutely guarantee all floors we instal.

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The "Sanitary" Refrigerating Machine may be used in connection with any ordinary well-made refrigerator having an ice capacity of 100 pounds or more. It requires a floor space of only 2ft. by 4ft., and stands 3ft. high. It is essential to specify the voltage of electricity used, and whether the current is direct or alternating. The water pressure should also be specified, as water is used circulating through a $\frac{3}{4}$ in. pipe to convert the ammonia gas back to its liquid form, so that it can be used indefinitely.

In addition to the automatic control of the temperature, there is an automatic valve that closes the water line to the condenser when the machine stops, thereby preventing water waste. Should the water supply to the condenser fail for any reason, an electric contact on the gauge automatically stops the machine, preventing the pressure rising. When the water supply is renewed, the machine starts again.

These are three examples of the large range of household comforts that are handled by Messrs. John Danks & Son, Pty., Ltd., of 324-330 Pitt-street, Sydney.

PLAN REPRODUCTIONS.

We recently had the pleasure of looking over the premises occupied by the Commercial Copying Company, and were surprised at the speed with which they handle their work, and the plant they have installed so as to deal with any class of work that comes along.



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Varnishes
Guaranteed.
Manufactured
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Personal
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Sterling Varnish Co.

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This firm, situated in the basement of Mendes' Chambers, 8a Castlereagh-street, Sydney, were the first people to instal mechanical drying in connection with their plan reproduction, and thus enable architects and engineers to get a dry print in ten minutes. They are not satisfied with giving speedy delivery, but claim to do the best prints, and from what we saw of their work, this claim is fully justified and borne out also by their ever-increasing and satisfied clientele.

Naturally, they realised that the backbone of their work would consist of helios, blue prints, and sepias, and have equipped themselves to turn these out efficiently, but at the same time they saw the possibilities of a new type of copying machine, which could assist their clients in another direction, and save both time and money.

They have called this new process the "Commercial," and by it they can copy any style of plan, whether of the usual style or mounted on thick cardboard or bound in a volume, and the copy can be made either to the same size, where that is necessary, or to a reduced or enlarged size.

The advantage of this is that architects can take records of plans of which they may be requiring some data later, or take abstracts of designs of details which may have been published some time ago, and are only available in a single rare book.

There is often an occasion, too, when a client would prefer a small scale copy of a plan that can be slipped in the pocket.

This process will give an excellent copy from a pencilled sketch, and what interests both architects and engineers, by its means they can obtain copies direct from blue prints, which previously could only be done by the laborious method of tracing. A big advantage is that it is a faithful copy, and there is no need to check all details carefully, as in the old method.

As an example of the utility of this new process, we might instance that where there is a proposal to put before a board of directors, reduced plans of the scheme can be put before each director, and he can easily handle these and review them at his leisure, thus giving the matter greater consideration than where large plans only are available at the board meeting.

There are numerous other channels in which this machine has been proved, such as the copying of original documents, etc., but as this journal deals with the matter chiefly from the point of view of the architect, we have confined our remarks to lines that interest them.

The point must not be lost sight of that the activities of the firm are not confined to plan copying by this machine only, but that they are also thoroughly efficient in the general methods of plan reproduction.

THE BEAUTIFUL "RIPOLIN" PAINTS.

Motor car owners in all parts of the world are generally recognised as a body of people who have discriminating taste, but at the same time they do not allow their liking for a beautifully painted car

to over-ride their belief that utility must always be considered. This is the simple reason why the majority of the motor body builders in this country prefer to use "Ripolin" paints for their car bodies. Practical experience has proved to them that "Ripolin" can stand up against the rough usage that motor cars go through without in any way detracting from its appearance. Several of the leading motor houses and owners in this State have realised that "Ripolin" gives perfect satisfaction, and have stipulated to the body builders that all of their cars must be painted with "Ripolin."

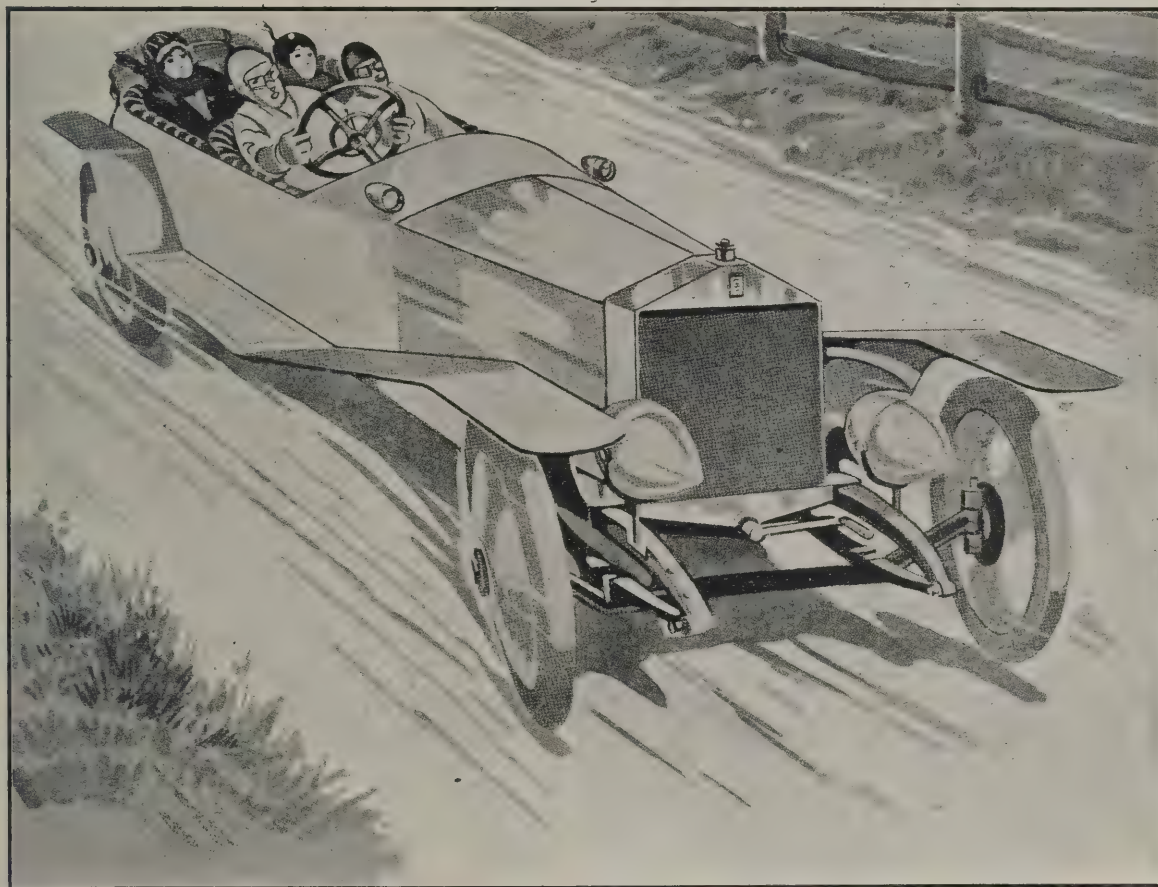
The fact that motor houses are specifying

"Ripolin" should demonstrate to architects that this paint will stand up to any conditions that are imposed by nature, and therefore it is ideal for outside use. It is only to be expected that a paint having these qualities should be practically everlasting when used indoors, and this has already been proved beyond question.

"Ripolin" paint has been used by the Railway Department for the past nine years with unvarying success. It is used in practically every country in the world.

Mr. L. A. Cormack, of 4 Underwood-street, Sydney, who is the agent for "Ripolin" paints, found,

RIPOLIN ENAMEL PAINT



RIPOLIN will keep its lustre on Motor Cars longer than any varnish produced.

RIPOLIN DRIES HARDER and will not hold the dust like a varnished car.

RIPOLIN Colors are permanent—many beautiful shades are available.

RIPOLIN IS NOT recommended by some car painters although the completed cost of the work is less costly than varnished work and much more durable.

Its excellent qualities are already known by almost all the architects in two hemispheres. On interior work RIPOLIN is practically everlasting. White and colors stocked by the leading Paint Distributors, or supplies and fullest information can be had from

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when visiting the principal paint factories of the world, that the majority always claimed that they could turn out an enamel "equal to Ripolin." This shows that rival manufacturers regard "Ripolin" as the standard of quality.

It is interesting for Australians to know that the whole of the interior of Australia House, London, has been recently painted with "Ripolin." It is also worthy of note that for the re-decoration of the Hotel Cecil, after its occupancy by the War Office, "Ripolin" was selected in preference to any other material.

THE "FIBROLITE" BUNGALOW AT THE SHOW.

One of the most interesting exhibits at the Royal Easter Show is a beautiful bungalow home, built completely with "Fibrolite" asbestos cement sheets and roofed with "Fibrolite" asbestos cement slates. The exhibit was made by Messrs. James Hardie & Co., Ltd., of "Asbestos House," York and Wynyard streets, Sydney.

The "Fibrolite" bungalow is a symbol of progress made in the construction of better homes for less money. It is the most inexpensive home that can be built, costing less than an ordinary weather-board house of similar size and construction. It conforms with every essential of the permanent home. It is beautiful, inexpensive, fire resistant,

white ant proof, borer proof, rot proof, and permanent. Under exposure to weather and service conditions, "Fibrolite" grows harder, tougher, and more durable.

The "Fibrolite" bungalow that forms the attractive exhibit at the Royal Easter Show is an education in what can be achieved in modern building construction at an exceedingly small cost.

The exterior walls are constructed with "Fibrolite" asbestos cement sheets of uniform size, painted white, and panelled with dark bronze green cover battens, giving a pleasing contrast. The gables are of "Fibrolite" shingles, presenting a new mode in architecture that is sure to win immediate favour with prospective home builders.

The soffit or box eave is lined underneath with "Fibrolite" asbestos cement sheets, giving an excellent effect. The roof is of "Fibrolite" asbestos cement slates (a light Scotch grey in colour), fixed in the diagonal method, which adds considerably to the appearance of the bungalow. These slates are immune to the destructive effects of sea-air and acid fumes, and cannot rust or corrode. Of interest to country residents is the fact that "Fibrolite" slates have absolutely no effect on rain water, and do not absorb water.

The interior gives a splendid idea of the many beautiful effects that are to be obtained in the interior of a home with "Fibrolite" asbestos cement sheets. The walls and ceilings of each of the rooms are constructed entirely with "Fibrolite" asbestos cement sheets, but the use of different shades of "Fibro-C" cold-water paint has given a distinctly different appearance to each room. The walls of the living room, for instance, are a delicate pink. The walls of the breakfast room are in cream; the bedroom is in a soft French grey with cover battens of the same colour; the hall is in white, and the bathroom and kitchen walls are pure white.

The ceilings throughout are in white, with cover battens stained to harmonize with the colour scheme adopted. The panel effects in each room strike a pleasing note.

"Fibrolite" asbestos cement sheets, slates, shingles and corrugated sheets are wholly manufactured in Australia by the Asbestos Slate and Sheet Manufacturing Co., Ltd., at Camellia, N.S.W., and at Burswood, Perth, W.A.

Of the material itself, it is interesting to note that "Fibrolite" is made solely from the best Australian Portland cement and specially selected long tough asbestos fibre—two wonderful minerals, of which only too little is generally known. Asbestos is older than any life on earth—it is one of the most marvellous products of inorganic nature. It has survived the fiercest test of nature's laboratories—centuries of flaming heat—proving beyond question that it is immune to fire. It is unchanged by high temperatures. Immune to rust, rot, heat, or cold, this unique mineral possesses an unparalleled aggregation of properties which make it absolutely self-

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maintaining. Called by mineralogists "asbestos," the name in its Greek form "aoBeotos" signifies unquenchable, inextinguishable, inconsumable. It is unaffected by oxidising influences. The oxygen in the air and water that has so great a destructive effect on organic and metallic materials, leaves asbestos unaffected. Asbestos has been known since the time of the early Romans. It is mentioned by Marco Polo in the thirteenth century, and even Charlemagne is supposed to have entertained and mystified his guests by committing his table covers "asbestos" to the flames. The earliest known source of supply was the Italian Alps, and the mineral was experimented with in the time of Napoleon the First. In 1866 practical results were obtained by the Italians. To-day asbestos is being mined in Australia, and large quantities of the specially selected fibre are being used in the manufacture of "Fibrolite."

Portland cement was used by the Romans more than 2,000 years ago in work which is still in perfect preservation. To-day it is successfully used in all classes of structures where the essential requirements are strength, durability and fire protection. Under exposure to weather, it grows harder and tougher. Engineering authorities agree that the crystallising or setting action of cement continues for many years. This means that it continually improves in strength and durability.

"Fibrolite" therefore has the indestructible qualities of asbestos and the strength and durability of cement. The material is made on a laminated process, being built by layer on layer, like the leaves of a book. The indestructible asbestos fibre is evenly interwoven throughout, giving uniform toughness and strength. The cement sets around the asbestos fibre, which reinforces the sheets as interwoven steel rods or wires reinforce a concrete wall. When the sheets leave the company's works, they are matured sufficiently for use. They have a perfectly smooth surface, are a pleasant blue-grey in colour, and can, if required, be left unpainted when used for exterior walls, interior walls, or ceilings. At a cost of only a few pence per square yard, the sheets can be painted to harmonize with any colour scheme. When the sheets are fully matured, they become harder and tougher, and this process continues indefinitely, actually making the sheets stronger and better the older they become. "Fibrolite" reduces labour costs, timber costs, painting costs, and insurance rates by 25 per cent. There are no maintenance costs, as "Fibrolite" constantly improves with age.

That "Fibrolite" has won favour as a building material for homes, sea-side cottages, garages, poultry houses, farm and station buildings, etc., is reflected in the big demand that exists for this material to-day.

The "Fibrolite" bungalow at the Royal Easter Show promises to be of very special interest to the prospective home builder, and those visiting the Show should most certainly avail themselves of this opportunity of inspecting it.

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SYDNEY

VISIT OF MEMBERS OF THE INSTITUTE OF ARCHITECTS TO MEGGITT LIMITED'S LINSEED OIL MILLS, PARRAMATTA

At the invitation of the management, a number of the members of the Institute of Architects of N.S.W. journeyed to the Meggitt Mills at Parramatta, and were conducted through a tour of inspection. The idea behind the invitation was to show the visitors how raw and boiled linseed oils are prepared and matured, also the tests they are subjected to before delivery is made. It is hoped the demonstration will assist architects in arriving at a decision when specifications are being prepared.

India. Although flax is being successfully grown in Australia, there is not sufficient linseed obtainable to keep the works running for more than a-week each year.

The bags containing the raw linseed are emptied into the elevators, and transferred to a reinforced concrete silo, with a capacity of 2,200 tons, and which towers 120 feet above the main building. From the silo it is taken by a drag conveyor to the cleaning machine, where, in passing over and



General View of Works—Macquarie Street Entrance.

The works of Meggitt Ltd. cover a large area, right in the town of Parramatta, and the rapid growth of the industry entails continual additions to the plant, the latest of which is now in course of erection.

The flax plant, from which the linseed is obtained, grows in many parts of the world, but that which is used mostly by Meggitt Ltd. is grown in

through sieves of varying sizes, all the impurities are eliminated, and the seed is thoroughly cleansed. It is then conveyed to rollers for crushing, but before reaching them it is automatically weighed.

After the seed is crushed into a fine meal, it is passed over to steam jacketed kettles and heated, and steam is also allowed to pass through the meal. The action of the steam opens up the oil cells, thereby

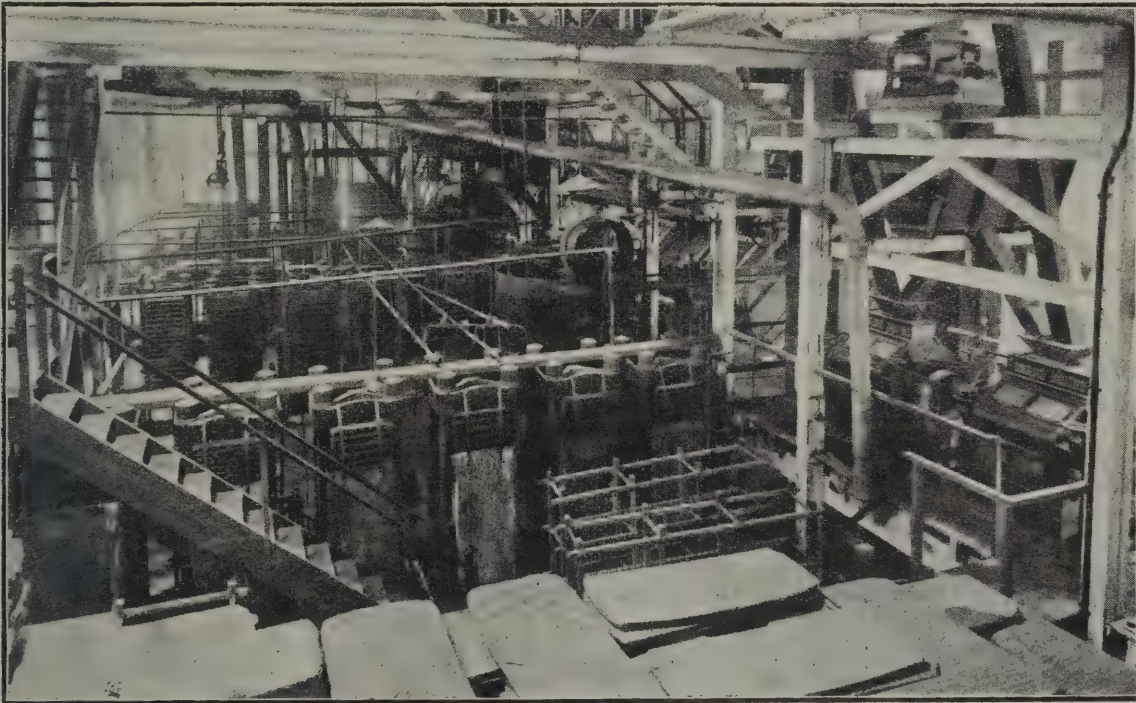
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materially assisting the flow of oil when the final pressure is applied. During this operation, the temperature is maintained at 175 degrees Fahr.

From the kettles the meal is moulded into cakes under a pressure of 500 pounds. To hold the cakes together and also to offer a good strong percolating

After the extraction of the oil, the cakes are taken from the presses, the camel hair cloths are removed, and the edges of the cake are cut off and passed to the kettles. After trimming, the cakes are placed in specially constructed racks to cool, before being stacked or passed over for crushing, to be made into



Interior of Crushing Room showing a portion of Linseed Oil Presses.

medium, camel hair cloth is used, being placed on the top and bottom of each cake. The presses are of the Anglo-American type, and hold twenty cakes each in its separate compartment, and the whole, when filled, is subjected to a pressure of two tons to the square inch, the oil passing by gravitation to underground tanks.

the meal that is now so widely used as a base for stock foods.

A patent hydro extractor treats the residues, cutting down waste to a minimum.

From the underground tanks the oil passes through filter presses, which separate any meal that has passed over with the oil from the extracting

process. This meal is returned to the kettles, and the oil goes to the settling tanks to cool.

After cooling, the oil is pumped into large maturing tanks, where it is exposed to the light and air for three months, at which time it is ready for the final filtration, before packing. Final filtration is accomplished by passing the oil through several thicknesses of very fine material, which obviates the possibility of any foreign matter remaining in a state of suspension. The oil is then run to the supply tanks, and to the packing department, where it is weighed into drums, casks or tins, as required.

Boiled Oil.—The only two ingredients added in the manufacture of boiled oil are manganese and litharge, which, in the form of a catalyst, increase the drying properties of the oil by providing a substance having a high affinity for oxygen. The process followed during the boiling operation is most carefully supervised, and at completion a sample is forwarded to the laboratory for testing and recording.

A feature of the industry is the well-equipped modern laboratory, and in it are kept records of the oil taken from the filtering tanks, and also from the despatch department, giving the date the oil left the mill.

To the architect the most interesting portion of the firm's activities are the production of raw and boiled linseed oils, but the manner in which the meal, from which the oil has been extracted, is used up, is also worthy of attention, particularly as it is

another instance of what might be termed the successful use of by-products.

After crushing, the meal is carried through automatic mixing machines, into which are fed other ingredients in the necessary proportions to make complete balanced rations for different classes of stock.

At the conclusion of the tour of the mills, the visitors were entertained with refreshments by the management in the laboratory, a building of intense interest to architects, because it was erected in 1791, and is one of the oldest habitable buildings in this State.

A NEW WATER PAINT.

The STERLING VARNISH Co., Huntley-street, Alexandria, Sydney, have brought out a new sanitary water paint that will always maintain its colour. This product may be used with confidence for all exterior work, such as fibrous plaster, brick, wood and stone. It is especially suitable as a priming coat when oil paint is to be used afterwards. One of its advantages is that a coat of "Ev-a-White" and one coat of oil paint may be applied the same day.

The new product is a high-grade sanitary water paint. As it is well milled and made from the finest materials, it may be used on mansion, cottage or factory. It works very freely, covers well, and does not leave any brush marks. It is claimed that one cwt. of "Ev-a-White" will cover about 850 square yards.

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ANCIENT AND MODERN.

Probably the most entrancing of the cities of the Old World is Venice, the city with canals instead of streets. Its gondolas, propelled over the moonlit waters by the gondoliers, singing their ancient songs, have stirred the imagination of painters and musicians of all countries. Its architectural work has been studied by architects of all countries, and such places as the Bridge of Sighs, over which the condemned prisoners walked from the Doge's Palace, the Courts of Justice of the city, have been immortalised by poets.

The floors of all the public buildings are examples of the pavior's art in the treatment of marble terrazzo, and all those who have trod these floors have marvelled at the manner in which they have been constructed.

One of the sights of Milan is the Art Gallery, and at the four entrances the coats of arms of Italy is worked in marble terrazzo. The beautiful colouring in this work always arrests the attention of those who are fortunate enough to behold it.

Those Australians who have seen the wonderful floorings above mentioned will be pleased to learn that in this country it is possible to have floorings constructed in marble terrazzo. The modern building that is being erected in Bayswater Road, Darlinghurst, under the supervision of Messrs. Burckham Clamp & Mackellar, contains examples of marble terrazzo work, but modern methods have been applied to its construction, and Australian materials are being used. The building referred to

is New Hampton Court Flats, at the time of writing the largest of its kind in the Southern Hemisphere. All of the stairs, landings, corridors, and balconies of this eight-storied building, which will contain 64 flats, are of marble terrazzo.

Marble terrazzo is crushed and graded marble mixed in Portland cement. The white marble that is used comes from Caloola, N.S.W., and the black marble from Spring Hill, N.S.W. The cement is the well-known Portland product. It will be seen, therefore, that the materials are all Australian.

The marble terrazzo is laid direct on the concrete base, and when set it is ground with an electric floor surfacing machine, that wears away all rough surfaces and leaves the floor perfectly smooth. It is then grouted, after which it is polished by the electric surfacing machine, this time fitted with a finer carborundum block than on the previous operation. The result is that a perfectly sanitary flooring is made. There are no pieces to get loose and there is no hollow drumming, as is often experienced when ordinary tiles are used. It can be easily cleaned, and owing to the chemical action of the Portland cement and the marble, it becomes harder than pure marble.

One of the beauties of this flooring is that it can be laid down in any kind of design that is required.

The work at New Hampton Court is being carried out by MESSRS. PETRUCC DREELIN & GAMBLE, of Madison Lane, Redfern. This firm has brought to this country one of the beauties of the Old World, with which no flaw can be found. Usually when things are introduced that have been in operation

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for centuries, there is some fault to be found with them, but marble terrazzo has stood the test of time and still holds its place. This is borne out by the fact that when the reconstruction of the City of Genoa was commenced 25 years ago, the authorities decided to use marble terrazzo, and the envoys of all the nations who are at present attending the Conference at Genoa, daily walk over footpaths which have been paved with marble terrazzo.

SHELL LIME.

How many of the habitués of the oyster saloons that abound in Sydney realise that the shell that they discard so ignominiously after having partaken of the delicious oyster, may within a short space of time form the beautiful interior decorations of one of the modern buildings that are in course of construction in this rapidly growing city.

Stone and quicklime are known to all those connected with the building professions, but to many the advantages that are to be derived from using shell lime have not yet become apparent. Shell lime has already proved itself in this country, as in the majority of the buildings of the early days shell lime was used for plastering, and the demolition work that is being carried out to-day testifies to the lasting qualities of this building material.

MESSRS. A. WARNES & SON, Canal Road, St. Peters, are shell lime merchants, and the name of

Ricketty Street, the original name of this thoroughfare, is one that is familiar with the builders of a few generations ago, and is always linked in their minds with the name of Warnes. Those who can go back beyond these days will remember that the industry was first started by Mr. Gardner, and since the start the firm has been turning out shell lime of the highest quality.

The shells used are gathered from the numerous oyster saloons in the city and from various shell deposits on the North and South Coasts. They are calcined at the works at St. Peters, and during calcination their welfare is looked after by a lime-burner, who has been in the trade all his life and who understands the temperature that is required, and, what is more to the point, knows the weather conditions that are best suited for burning.

The qualities of shell lime for setting and finishing walls and ceilings have been proved, and it gives a smooth, glossy surface which does not crack nor blow, and consistently retains a hard finish.

In dealing with shell lime, it is particular that the maker's instructions should be carried out, and with every bag that is sent out there is a card giving instructions as to the best method of using. This policy was found necessary some time back, and although the majority of workmen now understand the peculiar properties of shell lime, the instructions are still sent out.

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Anyone desiring to see the class of work that can be done with shell lime has only to look at Union House, London Bank Chambers, and numerous other buildings now in course of erection, names of which may be obtained from the firm.

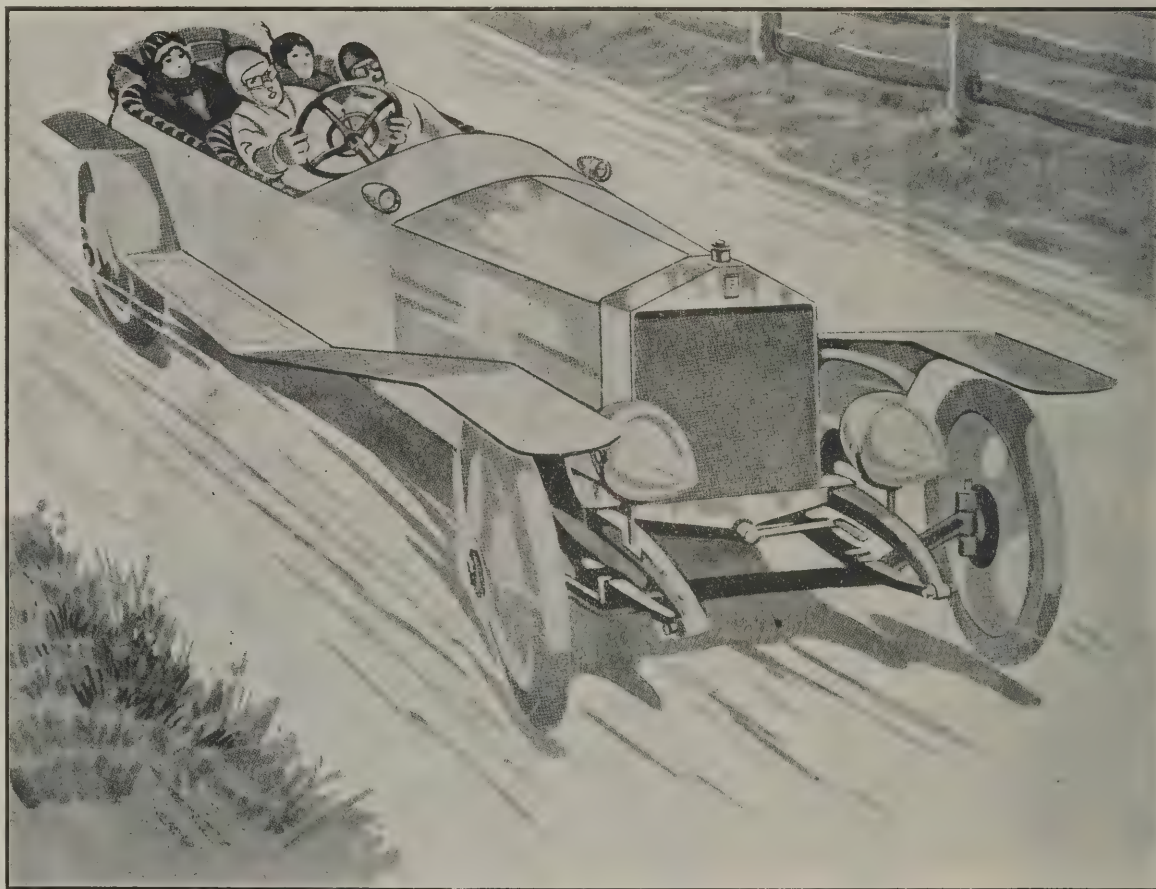
THE BEAUTIFUL AGE.

The present age might well be called "The Beautiful Age," because after passing through the devas-

tating period of the war, when the energies of the whole world were turned towards making everything hideous, and also after going through the troublous times which closely followed the cessation of hostilities, the world in general has started to array itself in bright colours in an effort to throw off the effects of the past few years.

Evidence of this striving after the beautiful can be seen in all directions; the women's fashions tend toward the use of bright colours, and even men, who usually prefer quiet colours, are to be seen

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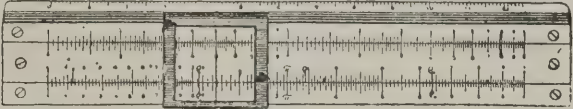
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arrayed in pleasing colours that are reflected in the pleased expressions that the changed conditions have brought to the faces of all people.

It is not surprising, therefore, to find that the tendency at the present time is to make buildings, which were long ago due for their periodic coat of paint, more pleasing in appearance. Those people who are wearing beautiful attire require beautiful surroundings, and in consequence the paint and varnish manufacturers in this country are being inundated with orders for supplies of their products.

THE STERLING VARNISH CO., of Alexandria, is an Australian firm that has a long line of products that are required by painters. From the many excellent lines that this firm manufactures, it is impossible to single out any one as being the best, because they are all the same quality.

The oil dryer made by the firm is sold under the name of "Dryol." This preparation is an oil drier, made expressly to dry paint. It produces a paint of great durability, drying with a hard, lustrous surface. One of its features is that you cannot kill the life of the paint by putting in too much Dryol. When a hard-drying, durable medium is required for fences, woodwork, etc., this product should be mixed with linseed oil in equal proportions.

"Primol" is an excellent quick-drying primer, that is used throughout Australia for many purposes, especially for priming new wood and plaster,

or dirty walls and ceilings. Walls and ceilings primed with Primol may be prepared, painted, or kalsomined with the greatest ease. Flat oil paint may be mixed with Primol for the priming coat, without fear of the paint becoming thick or rosey. This preparation has been made after very many years' experience in the manufacture of gloss oil.

The firm are manufacturers of various lines of varnishes, which have given satisfaction to many users, but their chief line is Sterling Oak Varnish. This is a durable, elastic varnish that can be used for all general purposes, and it gives most satisfactory results on all exterior work. Egg Shell Flat Varnish is noted for its finish, producing that soft, dull and pleasing effect so much desired for interior work. Hard Drying Oak Varnish is most suitable for all interior work where a hard surface is required. It is also excellent for under-coating work that is to be finished with Egg Shell Flat Varnish.

Sterling Priming Stains are manufactured in any shade, to suit all purposes. They dry quickly, and so prevent the suction of the wood, thus acting as a wood filler. They expedite the work, and are most economical, thereby saving time and money.

For the special purpose of preserving all exposed woodwork and weatherboards, there is Weatherol, a hard-drying weather-resisting oil. The first coat of this preparation penetrates the wood, and the second dries with a good, lustrous, weather-resisting surface. Some of its features are that it does not darken with age, it brings out the grain of the wood, prevents decay, is easy to apply, and is claimed to be more economical than paint.

Owing to the high cost, many large buildings are not painted at the present time, but the brick work is cleaned, and in some cases tuck-pointed, so producing a very pleasing effect. There are disadvantages with these buildings in very wet weather, as the bricks absorb moisture and, in so doing, at times cause a lot of damage. The firm manufactures two preparations for treating such brickwork. "Briclac" dries with a hard, clear, lustrous, durable and weather-resisting surface; the first coat penetrates into the bricks, second and third coats dry with a nice lustre. "Ev-a-dry" is a colourless liquid, and dries without a gloss. It does not in any way alter the colour of the bricks, is very durable and a splendid damp resister. Two or three coats are required to make brickwork damp-proof.

These are the lines that interest the general painter, but for the householder who desires to embellish his residence there are several lines of interest.

There is an old adage which runs, "A man's work is from sun to sun; but a woman's work is never done." Therefore any means by which household work can be made lighter should receive the earnest consideration of all men. This is the reason that prompted the Sterling Varnish Co. to manufacture Stovlac, a labour-saving polish for stoves, slate steps and all ironwork. With this preparation, there is no need for laborious rubbing, as all that is necessary is to apply it with a brush and leave it to dry.

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WATER PAINT
THAT IS ALWAYS
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One of its advantages, and a great one in the opinion of those who cook, is that if anything is spilt on the stove during cooking operations it can be washed off without interfering with the polish.

Art-a-fec Floor and Furniture Stains are made in nine different shades. They are excellent for staining floors and furniture and for making old furniture that is scratched and faded look fresh and bright. The firm also manufactures Art-a-fec Flat Stains in a variety of clear-toned colours. When applied to new wood they impart an artistic effect, bringing out in all its beauty the grain of the wood.

Another labour-saving preparation is Linolac, which, as the name implies, is for using on linoleum, floors, etc. It is applied in the same manner as lino. creams, but it must not be rubbed. It dries very quickly and is not slippery. Two other lines of interest are the Aluminium Enamel, which imparts a hard, brilliant silver finish to kitchen and bathroom fittings, and the Household Enamel, for use on all fancy articles in wood or iron.

All of these lines are commended to those people who desire to make their homes beautiful.

TAUBMANS LTD. AT THE R.A.S. SHOW.

This well-known firm of superfine varnish manufacturers had a particularly attractive exhibit at the Show, two stands being occupied in the Hall of Industries. In addition to their trade lines, which include a comprehensive range of varnishes, stains, oils, enamels, etc., many household lines were ingeniously featured per medium of a rather elaborate model house, in which five rooms, as well as vestibule, kitchen and bathroom, were exposed to view. The firm's products were used throughout, the roof featuring Solpah Roofing Paint, exterior walls treated with Mill Ground White, and interior walls with Russolene (Flat Oil Paint) and Penetrol (Oil Wood Stain). Ceilings featured Russolene, whilst the floors were tastefully finished with Taubman's Floor Stain in various art shades. A "frosted silver" stove, piping, and bath heater showed the special function of Silvafras (Brilliant Aluminium Enamel), whilst a dainty model bath displayed the virtues of Taubman's Bath Enamel. Altogether this exhibit attracted a vast amount of attention. The same may be said of the revolving model lighthouse, nicely panelled to display the many shades of Taubman's Supergloss Enamel.

One was immediately attracted by the floral decorations of the exhibit, the "frosted silver" appearance of which disclosed a new use for Silvafras.

The impression one came away with after studying the many and varied lines manufactured by this progressive firm was that whether it be mansion or cottage, factory or office, the whole of the interior and exterior decorations could be successfully obtained from products under the "TAUBMANS" label.

FLOOR FINISH.

The American Concrete Institute held its 18th Annual Convention in February last, and the fol-

lowing report which has been taken from *Concrete*, was discussed during the part of the convention devoted to "Field Problems."

After a careful study of the existing standards of the Institute Floor Finish Committee C-2, N. M. Loney, chairman, had only one recommendation to make—that special methods be allowed, but that no changes otherwise be made in the standard specifications.

A paper with a most practical flavour, from the viewpoint of a superintendent on the job, was presented by Joseph C. Brady, Boston, with a view to stimulating the effort to obtain the best cement-finished floors possible for the varying uses to which they may be subjected, and at the same time give due consideration to the factors which must be studied and applied in each individual case. After considerable investigation and study of the question of finish for concrete floors, the writer of the paper concludes that finish placed some time after the structural slab will in general produce the most satisfactory final results.

Cement finished floors are divided into three distinct types, the descriptions of which are included in the following abstract:—

Cement-finished floors may be divided into three distinct types, as follows:

- A. Monolithic.
- B. Finish placed later (on structural slab).
- C. Finish and base placed later (on structural slab).

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A. Monolithic Finish.

Where a building is carried up even in warm weather at a speed of six or eight days a story, the final results will be scratched and scarred floors that are very poor in appearance and will not stand up under heavy trucking. On the same operation, should the element of speed be disregarded to the extent of allowing each section of finish to be properly protected and workmen kept off it for three or four days, an excellent finish would be the result. This mode of procedure would rarely be possible, as the economy in design and material which belongs to this type of floor would be more than balanced by the interruption in the sequence of the various operations and the disrupting of the organisation.

Important Details.

1. Erect standard rain protection daily regardless of weather conditions.
2. Correctly proportion aggregates in rough concrete. An excessive amount of sand and cement will retard the water from drying off. Use only sufficient water to obtain a workable mix.
3. Rough concrete should be carefully graded to allow for a uniform thickness of finish material— $\frac{3}{4}$ in. is sufficient.
4. Rough concrete of the proper consistency for reinforced work should be allowed to settle before screeds are set and before finish is spread. If this is not done and the finish is of proper consistency it will sink into the concrete and force the rough concrete to the surface. Pools of water on surface of rough concrete should be removed before finish is spread.
5. Run panels should be used to wheel finish over rough concrete. As each panel is removed, the smooth imprint left by the panel should be roughened and the displaced concrete brought to grade.

Monolithic Finish, Sprinkled Dry.

This type of finish consists of "pulling up" the rough concrete by use of straight-edge and short screed clamped on column bars. When the water comes to the surface of the concrete, remove same by use of darby and straight-edge. Sprinkle this

surface twice with one to two dry sand and cement. The suggested placing of this dryer in two operations is due to the fact that the low spots which will require additional dryer are more easily detected after the first coat has been applied. The total of these dry applications should average about $\frac{1}{4}$ in. in thickness. When dry coats have become wet by absorption and surface will sustain knee boards, float and trowel in regular way.

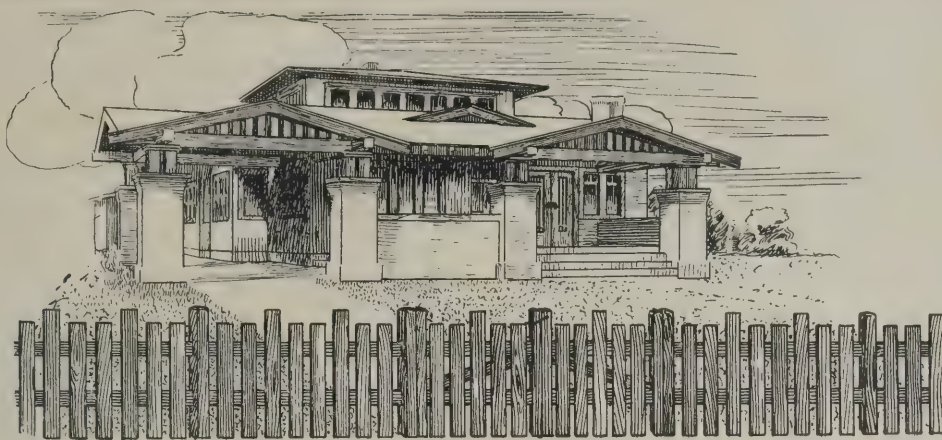
This type of finish is recommended for floors which may be subjected to light wear or used for dead storage purposes.

B. Finish Placed Later.

Except as noted under A, this type is recommended. The extra cost in design and materials is less than winter weather charges would be if the A type floors were laid during cold weather, and the final results are positive, while the A type results are uncertain.

Important Details.

1. Great care should be taken in levelling and grading the rough concrete slab, allowing a uniform thickness of $\frac{7}{8}$ in. for finish to be placed later.
2. After rough concrete has been in place for several hours, or has hardened sufficiently to sustain the weight of a man, use a steel wire push-broom to sweep all fine material and laitance from the surface of the slab, exposing the coarse aggregate. Do not use a rake.
3. Where floor finish is to be placed during cold weather, arrangements should be made to have the permanent heating system (if any) in operation before the floors are laid. Where salamanders must be used, sheet iron covers and flue pipes should be provided to carry coke gas out of building.
4. Prepare the rough slab to provide a bond for finish coat as follows:—First, remove all spots of mortar which have dripped from forms above, etc. Second, thoroughly dry sweep well in advance of area to be finished. Third, in the afternoon of the day before finish is placed, thoroughly wash with clean water the area to be finished the next day. Washing should be done with a hose with sufficient pressure to force out and carry away all sand and

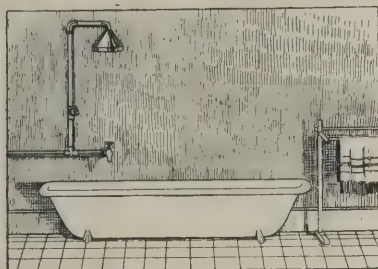


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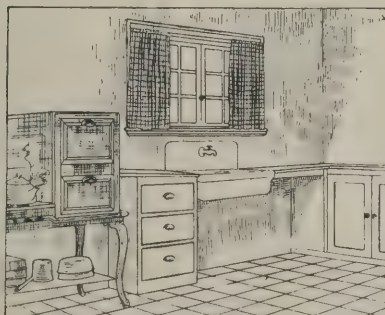


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dirt or other foreign matter which may be lodged in pores or indentations of rough slab. The quantity of water necessary to properly wash the rough slab will often cause considerable trouble in the stories below where the washing is in progress.

Before finish is placed, sprinkle the rough slab with water, but do not create a surplus of water. Next apply a 1:1 cement grout and sweep thoroughly into the rough surface. Apply finish before this grout dries.

C. Finished Separate Slab.

This type of finish generally consists of a 2 in. base of cinder or stone concrete with a 1 in. monolithic finish. This is the more expensive type of finish, on account of the dead load, loss of story height, and extra materials, but has advantages where it is desired to bury small conduits, pipes, etc., between the rough slab and the finished slab (steam and hot water pipes excluded). Joints should be cut as described later under "General," and finish mortar allowed to turn down full thickness of slab and about 2 in. wide on all sides of each individual slab. This is to prevent curling. Screeds for this work should be set on dots the day before base concrete and finish are placed.

For best results, this floor should be laid in alternate sections, four slabs or sections to the ordinary bay.

General.

Proportions for finishing coat:—

1 part cement.

$\frac{1}{2}$ part sand.

1 $\frac{1}{2}$ parts grit or clean, hard rock (size $\frac{3}{8}$ in. down, with sand or dust removed).

In the finish or topping, use the minimum amount of water that will allow the finish to pull with a saw action on the straight edge without tearing apart, leaving a fairly smooth dense surface. Floating and trowelling of wet finish settles the coarse aggregate and brings fine material to the surface.

Finishing.—Floor should be floated and trowelled twice. The first operation should not take place until the finish has set enough to retain the knee boards on the surface. Floating and trowelling of wet finish settles the coarse aggregate and brings fine material to the surface.

Floor Joints.—Mason's jointer should not be used on any floor which may be subjected to trucking. The joint should consist of a knife cut only.

A type floors should have knife-cut joints at fill lines only.

B type floors should have knife-cut joints at fill lines, and in finish directly over construction joints in slab.

C type floors should have knife-cut joints at fill lines; that is, at column centres and at centre of bay in each direction.

After Protection.—Cement-finished floors should be kept saturated with water for two weeks after being laid. Water must not be applied until floor is hard enough to prevent blistering and peeling. This is wholly a matter of judgment and is dependent on atmospheric conditions.

A one-inch layer of sawdust spread on the floor and kept thoroughly wet with water will assist in holding moisture, and properly protect and "cure" the floor.

A strip of burlap 3 in. or 4 in. wide laid at edge of preceding day's work and overlapping sawdust will help to prevent sawdust from being blown or dragged on to new work.

Hardness.—Surface or after-applied hardeners will add somewhat to wear-resisting qualities of a floor which is subjected to grinding action from heavy trucking; that is, provided the floor contains the proper hard aggregate, and is what might be called a good floor to start with.

Integral hardeners and accelerators are recommended for use in type B and C finish, provided no mesh or reinforcement is to be placed in same. This type of hardener is also recommended for monolithic finish when used in connection with plain concrete, but should not be used in monolithic finish or reinforced concrete until more favourable information as to their action on metal is available.

Miscellaneous Items.—Where artificial heat is used in connection with finish floor work, a temperature of about 60 deg. should be maintained. Too

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much heat will cause floor to dust badly when dried out.

Placing of all floor finish should be arranged so that it will be unnecessary to wheel over newly laid work.

THE "JOKER."

The latest invention in bath water heaters is a non-contact heater, made entirely of heavy copper, comprising a coil and jackets, thereby giving more heating surface for a smaller consumption of gas. All the fittings are brass and this prevents rusty and dirty condensed water from dripping on the bath. The water coming from this heater is so pure that it may be used for both drinking and cooking purposes with perfect safety. It is fitted with special fool-proof safety combustion taps, so made that the water is running through the heater before the gas is lighted. It is made in seven different models, all being on the same basis. These models range from a chip heater to a hot water service heater.

Demonstration of this new bath heater will be given to those interested at the factory of the maker and patentee, W. H. WOODBRIDGE, 43a Edward Street, Redfern.

OXIDISING SEWAGE DISPOSAL.

Possibly the most interesting exhibit at the recent Show to the large number of people who are not at present linked up with the sewerage system was the Oxidising Sewage Disposal Plant which had been erected in Park Road and Hordern Street by MESSRS. MONTGOMERIE NEILSON & Co., of 87 Phillip Street.

A six-person tank was erected, and connected to it were three ladies' conveniences and one for gentlemen, whilst a ladies' cloak-room was also provided for the public convenience. During the course of the Show no less than 4,017 persons used these conveniences, and the results bear out the claims of the makers that the plant is practically odourless. In fact, the final effluent, which was sprayed on the land, was so clear that it was with difficulty that people were restrained from drinking this water. Owing to the number that had to be stopped, drinking fountains will be placed at each entrance next year.

It is only of late years that the danger from the faulty disposal of house waste and human effete matter has been fully realised. Many systems have been devised, but very few have been successful, and the problem still remains to many a harassing question.

This question has been agitating the minds of several large towns, and towards the end of last year, Mr. S. Gordon Moore, the Engineer of the Bendigo Sewerage Authority, visited this State and investigated several of the sewerage disposal works. One of the places visited was the pleasure grounds at Clifton Gardens. This plant deals effectively with the large number of people who visit this pleasure resort, and on public holidays there are often 6,000 people there. The tanks are situated right in the centre of the playing area, and the fact that it is no uncommon sight to see the picnickers sitting on the top of the tank partaking of their lunch is conclusive proof that the system is, as claimed, odourless.



Oxidising Sewerage Disposal at Clifton Gardens, N.S.W.

Other places visited were the Gladesville Hospital, where the plant was constructed ten years ago, and which deals satisfactorily with about 1,200 patients; and the Kenmore Mental Hospital, four miles out of Goulburn. The latter works were erected eleven years ago, and are used by about 1,200 patients.

Accompanying Mr. Moore were Mr. Farrer (Engineer of the Ballarat Sewerage Authority) and Mr. Sambell (Consulting Engineer for the towns of Mildura and Frankston).

All of these gentlemen in their reports to their respective bodies spoke in glowing terms of the success of the Neilson System, and strongly recommended its adoption.

The foregoing remarks amply demonstrate that the system has proved itself on a large scale, and the fact that there are large numbers of tanks in those suburbs of Sydney not yet served by the water system demonstrates that the plant works effectively for single residences. In one case the tanks were placed six feet from a bedroom window at a residence at Vaucluse, and the inmates are unaware of its existence except for the benefits which they derive from its installation.

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After going carefully through the reports mentioned above, and seeing the plant in operation at the Show, one is forced to the conclusion that its installation is a necessity.

This system can correctly be called the simplest, smallest and most efficient, and, most important of all to many people, the cost is very low. Another point in favour of the Neilson System is that the maintenance charges are practically nil, and from the reports that are available from the above mentioned institutions, it is practically 100 per cent. efficient.

PLYMEL PRODUCTS.

There are a number of lines of interest to all builders and architects turned out at the works of Plymel Ltd., at Leichhardt, Sydney. The firm has now been in operation for the past 30 years and the reputation of their products has become firmly established.

The Damp-proof and Preservative Composition, used for general outside purposes has stood the test of time as a preventer of rot or decay. This has been used extensively by the Commonwealth and State Government Departments on such work as telephone and telegraph poles, cavity walls and foundations, etc., with unvarying success.

When a paint is required that is impervious to moisture, proof against acids and alkalis, and can also withstand extremes of heat and cold, the firm

supply their clients with Black Elastic Carbon Paint. This product has been used on all kinds of marine work, on water cisterns, stove and water pipes, refrigerators and numerous other kinds of work.

One of the advantages of the Coloured Paint manufactured by the firm is that it does not matter if the roof or wall is in a dirty condition, as this material will cover it and make it look like new. It adheres well on asbestos cement sheets and is non-injurious to the material.

Other lines of interest to all members of the professions are Boiler Fluid, for cleaning and preventing scale and corrosion in steam boilers; Wood Stains for floor and outside woodwork and Weed Destroyer and Green Timber Killer, a product correctly described by its name.

Altogether this firm handles a list of products that merits the attention of everyone.

THE LAGOLIO TILE CO.

A representative of this journal went over the works of the above firm, which are situated at Melbourne Street, Concord, but owing to the lack of space it is impossible to give an adequate description of the activities of the firm in this issue. The visit was both interesting and instructive and a complete description will be given in a future issue of this Journal.

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A CLEVER CONCRETE CONSTRUCTION.

The Macquarie Hotel, Sydney.

The numerous difficulties and problems that confront building contractors in the construction of many

ways and means whereby the apparently insurmountable tasks of a few years ago can be speedily overcome with little or no trouble. Such appears to be the common impression, erroneous in many respects as it



THE MACQUARIE HOTEL, SYDNEY.
SUPPORTED ON RAFT FOUNDATIONS

The water freely percolates under the site of this building, and support has been obtained by rafting over the mud with reinforced concrete. The building is of business-like design, and simple effect has been obtained by the introduction of heavy string moulds over the openings, and by pilasters and perforations.

of our large buildings of to-day are little known and less generally appreciated. To the average man such things as huge excavations are seemingly simple. Modern methods and machinery have provided the

may be. The extent of the difficulties and problems met with in modern building construction may be measured by the following information.

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of Reinforced Concrete Construction over other structural materials.

With this article we reproduce a very interesting series of photographs of the new Macquarie Hotel,

A. Reed, Engineer of the Trussed Concrete Steel Coy. (Australia) Limited. The illustrations will convey some idea, to the practical man and layman alike, of the difficulties met with in erecting large buildings on



FOUNDATION LAYING UNDER DIFFICULTIES

The difficulties of getting a foundation into such grounds as are here shown are necessarily great, though by the use of concrete the building is materially assisted. These illustrations show the site partially excavated and the presence of the percolating water.



Woolloomooloo, recently built to the plans of Architect E. Lindsay Thompson, by Messrs. Howie Moffat & Co., builders, working in conjunction with Mr. Chas.

foundations where natural conditions do not assist in facilitating the progress of the work to be executed. Not only is the progress of the building seriously

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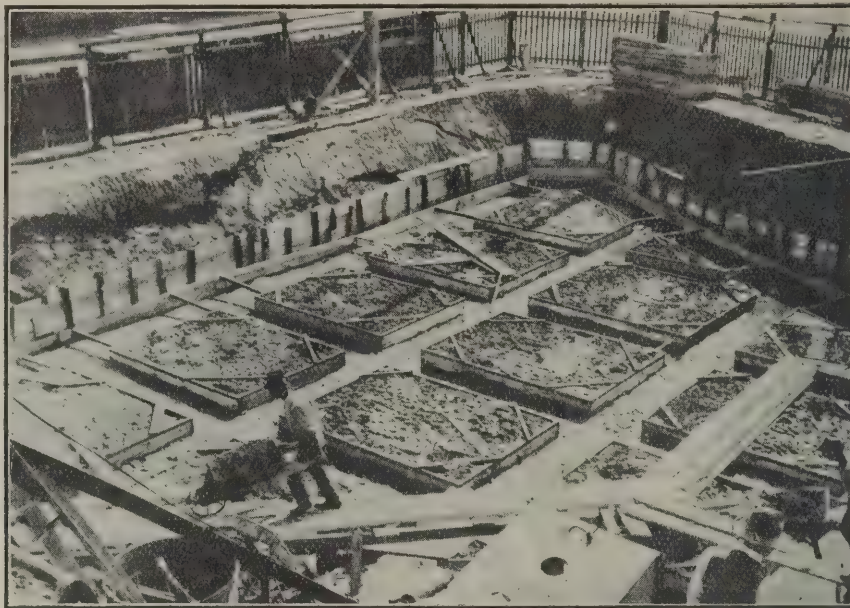
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retarded but valuable time is often sacrificed and heavy incidental expenses incurred.

from the deep water frontage near the Woolloomooloo Bay Wharves by a 100-foot roadway. In the recon-



CONCRETE FOUNDATIONS AT WOOLLOOMOOLOO

After securing the soil on the building line, elaborate shuttering has to be constructed to give form to the concrete foundations, and the expedient has been adopted of filling the boxes which form the shuttering with soil, and this, of course, gives them enough stability to resist the spreading of the concrete.

The site of the new Macquarie Hotel is in close proximity to Sydney Harbour, and is only separated

from the deep water frontage near the Woolloomooloo Bay Wharves by a 100-foot roadway. In the reconstruction of this roadway some few years ago, the road was brought up to its present level by reclaiming with

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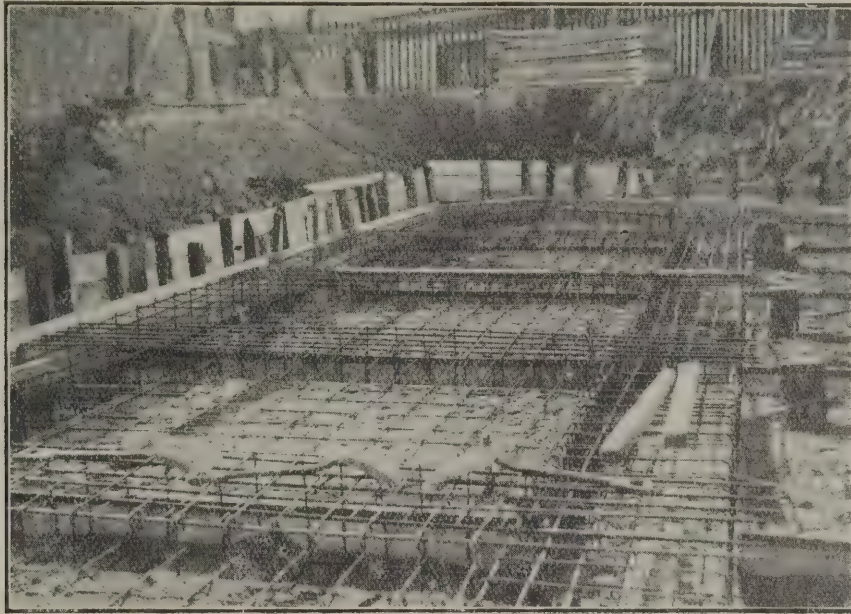
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porous deposits such as sand, stone, etc. It was when the excavating work for the new Macquarie Hotel was

to some degree the difficulties that would be encountered in carrying out the excavations. As will be



NEARING THE FINAL STAGE

The wall foundations having been formed in concrete, the whole area is covered with a layer of reinforced concrete, forming a huge raft. At the stage shown the reinforcement is in position ready to receive the final layers which eventually form the basement floor.

commenced that the contractors learned of the extremely porous nature of the roadway and realised

immediately apparent to the reader, once the excavations were carried down below water level, the water



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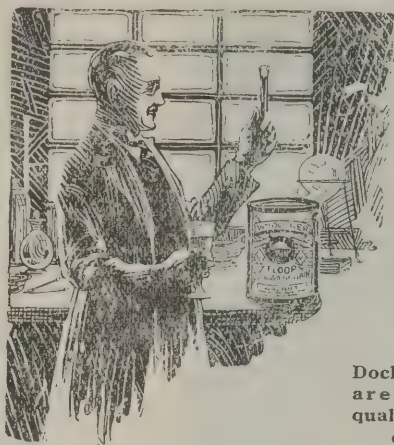
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from the harbour would soon find its way through to the cavity excavated in consequence of the porous nature of the roadway, and also the exceedingly heavy water pressure created by the rise and fall of the tide in Woolloomooloo Bay. This was anticipated, and it is just precisely what happened. The effect of the heavy water pressure, and the porous nature of the roadway, is seen in accompanying illustrations, which show the state of the excavations at the various tide levels during the progress of the work.

The cellar occupies the whole area of the building, and the cellar floor is 5 feet below high-water mark. By the time the excavations for the cellar were completed, the water poured in at the rate of 60,000 gallons per hour. It would seem almost an impossibility to carry out these excavations under such exceedingly abnormal conditions, but the difficulty was overcome by installing a 6-inch centrifugal pump to cope with the incoming water. That is to say, to enable the work to be proceeded with, water had to be pumped at the rate of 60,000 gallons per hour. This done, the excavations were proceeded with. On account of the unstable nature of the soil it was found necessary to confine it by timbering the sides of the trenches to prevent the silt flowing into them.

Reinforced Concrete Raft Foundation.

The condition of the soil necessitated either a raft and pile foundation or a reinforced concrete inverted raft; such as it was found expedient to use in constructing the Fish Markets on the banks of the Brisbane River; the nature of the raft depending on whether equal or unequal resistance of the soil was to be dealt with. In the latter case an inverted raft over the whole site would remedy the defective foundation soil, which method of construction was adopted in this case.

Illustrations shown herewith indicate the reinforcement placed in position ready for concreting. It will be seen that the reinforcement on the top of the slab is not shown. This was placed in position later as it was found impossible to keep it in its correct position during the earlier stages of the concreting.

The concrete raft was designed of sufficient strength to allow for two additional storeys to be added to the hotel at a future date, if desired.

Notwithstanding the unstable nature of the soil, and the many difficulties that had to be contended with in construction, the building shows no sign of settlement, and there is no appearance of any cracks in the brickwork. The cellar is absolutely dry even although the raft forming the floor is subject to a hydrostatic pressure of 5 feet.

The building at present comprises basement, ground floor, first floor and flat roof, the roof being designed to form a floor at some future date when the remaining storeys are added.

The whole of the interior work—viz., floors and roof, together with beams and columns supporting same, and staircases—is constructed in reinforced concrete to the designs of the Trussed Concrete Steel Company.

* * *

KEEP WARM.

With the arrival of the cold winter nights everyone is making preparations for heating their homes, work-rooms and offices, and, whilst large numbers still prefer coal and coke fires, the number of people who prefer electricity are rapidly increasing.

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The reason for this is not hard to find. The people of to-day are realising that greater care must be taken of the health, which, in the past, has been left a great deal to chance. Fires in the homes were looked upon by many to be only for those who were lacking in physique, and when sickness visited the families recourse had to be made to the coal or wood fires, or, in some cases, to gas stoves. With coal or wood fires there is always a great amount of work for the housewives and since the general run of man demands reasonable hours for himself, he should see that the same applies to his wife. With electric heaters there is no work at all. The greatest benefit to be derived from the installation of electric heaters is that there is no fire to use up the oxygen in the air, leaving a vitiated atmosphere for the occupants of the room to breathe into their systems. It therefore follows that the air in a room heated by electric heaters is purer than in one heated with a coal or gas fire.

In the matter of safety, electric heaters stand alone. There are no sparks to fly out and damage floor coverings or furniture. Another advantage is the ease with which they are controlled. A touch of a switch and the work of heating the room commences at once; and when the room is once heated to the desired temperature, it is possible, if the right type of fire is installed, to maintain the room at the one temperature.

There are two chief methods of distributing the heat. The luminous and non-luminous types. The luminous type is represented by frosted lamps, and was the first manner in which electricity was applied for heating the homes. The latest type is known as the element or hot wire type. With this style a resistance wire is wound round a fireclay base in the shape of either a cone or a bar. With the cone type it is impossible to regulate the heat, but with a firebar heater, in which more than one bar is used, the heat can be regulated.

Many people are prejudiced against electric fires because they cannot see the flame the same as in the ordinary fuel fire. With the lamp type this objection can be understood, because the heater resembles an ordinary frosted electric light, but people who have this objection should seek a demonstration of the element type when they will recognise that the heater, when fully working, gives a bright red glow that cannot be equalled by any fuel fire. Another advantage is that this cheerful glow is maintained without any effort

on the part of those in the heated room and there is no necessity for anyone to go out into the cold air to obtain fuel to keep the fire going.

One matter must not be lost sight of, and that is, that when ordering an electric heater the size of the room should be considered, otherwise a heater may be secured which will not efficiently heat the room. As an example of this, The Edison Swan Electric Co., Ltd., 58 Clarence Street, Sydney, who sell "Best" Electric Fires, state that a four bar "Best" fire, consuming two kilowatts per hour, satisfactorily heats a room from 1200 to 1500 cubic feet.

The firm mentioned above is one of the leading houses handling electric household requirements and they have on hand a large range of electric fires and heaters of varying designs, and suitable for every requirement.

In addition, radiators are supplied to harmonise with any scheme of interior decoration.

* * *

THE MANUFACTURE OF PIG IRON.

Iron and steel are playing such an important part in the erection of modern buildings at the present time, that information concerning the processes of manufacture of these commodities are bound to be of interest to all those who follow the building and allied professions, and architects, who are responsible that the buildings will be able to bear all the stresses which they are liable to be subjected to, are also interested in the processes of manufacture, because, after all, it is the method of manufacture that is at times responsible for variation in qualities of the same class of material turned out by different makers.

In the first place, it is well to explain that a blast furnace is a huge vertical cylinder, made of steel plates, and lined with refractory materials. The modern furnace is usually from 65 to 90 feet in height, and produces from 300 to 500 tons of pig iron daily.

In operation, the blast furnace is completely filled with proportionate amounts of iron ore, coke, and limestone, "charged" in alternate layers. The iron ore, by the aid of the pre-heated air and coke, is reduced to molten iron. The limestone combines with most of the impurities in the ore and coke, forming slag. At intervals of about four hours the furnace is "tapped," and the molten iron and slag are drawn off from the bottom. Additional raw materials are "charged" in

at the top in a continuous operation. The slag is separated from the iron, and the iron is poured into moulds. These operations continue day and night, month after month, until the lining of the furnace is practically burnt out, and it is necessary to stop for repairs.

Some blast furnaces still cast the molten iron in moulds made in the sand floor of the cast house. This "sand cast" pig iron is not suitable for the manufacture of ingot iron, because the sand sticks to the pigs and is carried to the open hearth furnace as a "silicate" which would be detrimental to quality.

The more modern method, and the practice at the furnaces of THE AMERICAN ROLLING MILL CO., of Middleton, Ohio, is to cast in pig-machines. These pig-casting machines are simply travelling moulds, of the endless chain type, into which the molten iron is poured. This method, together with the close inspection of raw materials, care in manufacturing processes, and close laboratory control, insures pig iron of the highest quality.

The production of one ton of pig iron requires approximately 4,400 lbs. of iron ore, 1,900 lbs. of coke, 1,200 lbs. of limestone, and 8,500 to 10,000 lbs. of air. In addition to the ton of pig iron, these materials produce, also, approximately 1,400 lbs. of slag, 100 lbs. of flue dust, and 12,000 to 13,000 lbs. of gas. The slag is used in road-building and concrete work, and for the manufacture of cement. The gas is used to pre-

heat the air that is blown into the furnace, and as fuel in the power plant. The flue dust is recovered through sintering, and is charged back into the furnace as an iron-bearing material.

* * * *

A BIG ELECTRICAL CONTRACT.

Of considerable interest to engineers throughout the Commonwealth, particularly those interested in railway electrification, is the fact that a large contract has been placed with the BRITISH THOMSON-HOUSTON Co. for eighteen 2,000 K.W. motor generators, and one with the International General Electric Co., for all the automatic sub-station gear and transformers necessary to make the complete outfits.

The order for the turbines in this particular contract, that is, for the South African Railway electrification, has gone to C. A. Parson & Co., and not to Switzerland, as anticipated.

The order for boilers has gone to Messrs. Babcock and Wilcox, and for the line material to the Telegraph Manufacturing Co.

A very pleasing feature is, that most of the contracts have been placed with British manufacturers, but it is significant to note that the mechanical parts for the locos. are being built in Winterthur, Switzerland.

In view of the amount of German capital invested in Switzerland, this particular phase of the contract should call for consideration in the deciding of all local contracts.

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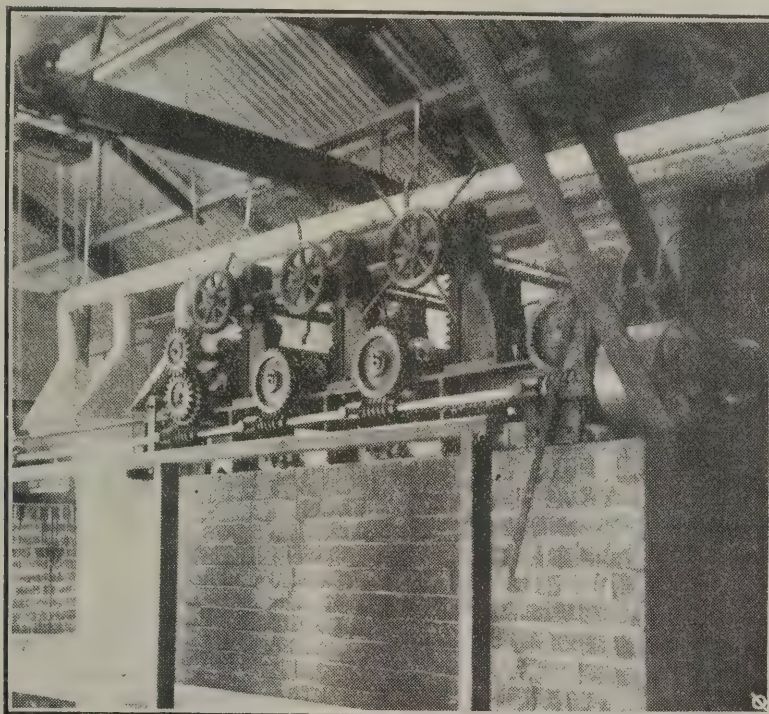
Building Materials and Craftmanship

The whole of the information in this section is supplied by the firms mentioned.

AUSTRALIAN-MADE ROOFING MATERIAL.

During the last few years many new industries have started in Australia, and one that commenced its career just two and a half years ago, and which merits

The materials made at this factory are the "Entee" bituminous roll roofing and dampcourses, the "Ledkor" (lead reinforced) dampcourses, "Enoleum" (a cheap floor covering), and bituminous roofing paints and



The Saturating Tank at Messrs. Norman Turnbull's Works.

the attention of all home builders, is the bituminous roofing and dampcourse factory erected by MESSRS. NORMAN, TURNBULL AND Co. LTD., of 167 Clarence Street, Sydney, at Rosebery.

flooring compounds. "Entee" is made in one, two or three ply. The first is adapted for the roofing of temporary structures or outhouses, and all buildings where an inexpensive covering is required. The second

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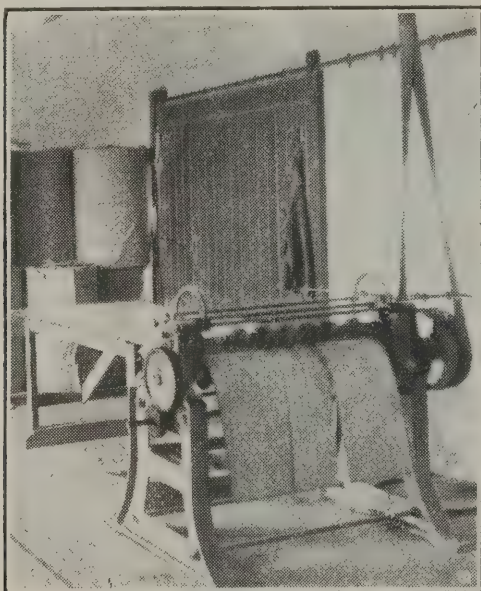
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is for dwellings, factories, warehouses, and all general roofing purposes. The third is for large buildings and unusually severe conditions. "Ledkor," of which the company is the sole manufacturer, is a bituminous dampcourse, reinforced with sheet lead, which is manufactured in any desired thickness or width, and is claimed to be permanent and absolutely dampproof. "Enoleum" is made in three colours—red, brown and green—and is said to be the cheapest floor covering on the market. It is claimed to be practically everlasting, and is most suitable for offices, warehouses and stores.

Departments have proved that "Entee" bituminous roll roofing is equal in quality to any imported article, and superior to many.

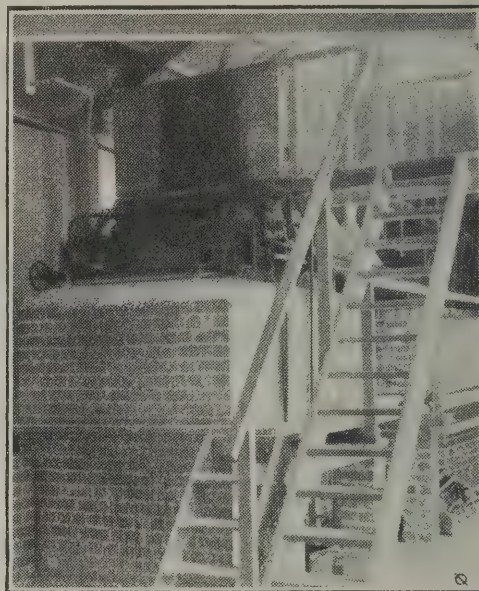


Dampcourse Cutting Machine.

The latest departure of the firm is the manufacture of electrical insulating tape, and all classes of waterproof papers for packing cases, etc.

The site at Rosebery has an area of $4\frac{1}{2}$ acres, and there is plenty of room for extending the present buildings. In addition to the main building there are stores for raw materials and thousands of barrels of bitumen are stored in the yards. The basis of the material is wool felt, which is specially manufactured for the firm by the Australian Paper and Pulp Mills, Botany. The plant is capable of turning out 80,000 rolls a year, but there is plenty of room to cope with the growth of the industry, and the company is assured of an efficient supply of felt to cope with any demands.

In common with all other Australian manufacturers the company has to face the competition of imported articles, but it is claimed that tests made by the Victorian Railways and different other Government



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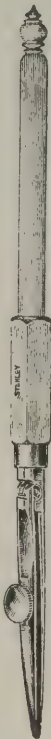
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Australia. It includes a dampcourse cutting machine, saturating machines, coating tanks, cooling rollers, talcing machine, etc. In the saturating machine the felt passes through in a broad band over steam-heated rollers, afterwards passing over the cooling rollers and into the coating tanks, and after the talcing process is a practically finished product. The rolls are then examined for defects, and anything faulty is put aside. In the packing department the ends of the rolls are dressed, and covered by calico, and a paper covering is put on, after which they are labelled and ready for sale.

Amongst the many advantages of this roofing may be mentioned its cheapness, its convenience in transport and the ease by which it can be fixed, without any expert knowledge, on the roofs or walls of any building. It is impervious to dampness, and while it is a fire retardant it does not affect the quality of water. Having these advantages it can be readily understood that the products of this firm can be used under all conditions and for all purposes.

WHAT IS THE DIFFERENCE BETWEEN COAL TAR AND ASPHALT?

There is a tendency on the part of the general public to confuse coal tar and asphalt, and it is very evident that the two names are often taken to mean one and

the same thing, which is quite contrary to the fact. Coal tar is a by-product from gas works and coke ovens, and is driven out of the coal as a gas; then, as the gas cools, the tar is condensed in a liquid form. It is of a gaseous origin, and dries out too quickly. For this reason tars have been practically discarded in the search of roofing makers for the best substances to use.

Asphalt, on the other hand, is a natural product. Trinidad asphalt is the best known, because most of us have read about it in our geographies and in books of travel. This deposit is on the Isle of Trinidad (off the north coast of South America). It is about 45 per cent. fine earthy matter, owing to its working up from the interior of the earth, through a sand bed, and the fine sand or earthy matter is found throughout the material. A solution of salt in the water which flows around and through it also permits a salt to work into the asphalt, and this salt, being soluble in water, has a tendency to cause disintegration when water stands on it for a fair length of time. This earthy matter and salt are not sufficiently removed in the process of refining.

Other asphalts are less well known to the general public because their names have not been in the geographies and have not been advertised. These asphalts are found generally throughout the world. Instead of being limited in supply, as has been thought at times, tremendous quantities have been located, and it has been found that the best product comes of the

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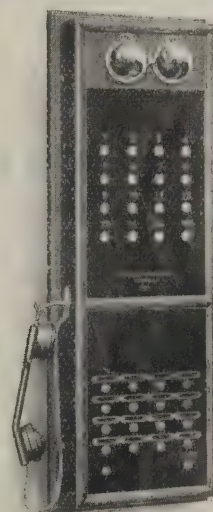
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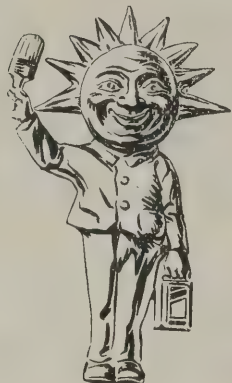
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proper selection of these asphalts, and the proper blending of them, having a full knowledge of the work to be accomplished by the finished product.

Asphalt is not an artificial product; it is always a natural product. It is found in hard, soft, and liquid forms in the earth. The only difference is that natural distillation in the earth has been carried on farther as the material is found in the harder conditions. The very hardest grades are those that have been dried out by the heat of the earth in the ages gone by. When this distillation is not complete in the earth it can be done in stills by man in just the same way, and the residue is asphalt—a natural product. No artificial product has been created by this process—only the lighter materials have been carried off. It is sometimes urged that Nature does this work better than man. This is untrue. The work of Nature is (too often) the work of chance. The heat it employs is not finely regulated to fit the work in hand. Too high heat is objectionable in either case, and Nature, being a careless refiner, may have used extreme heat. The best product is procured where proper knowledge and careful work are used in securing the result, and man with his thermometer and care based on intelligent research does this better than Nature, and gets a more uniform product.

All asphalts, hardened by natural drying out in the earth, require blending and treatment before they are ready for use.

Asphalts.

Tampico (Mexfalt)	..	..	Mexico.
Texas	..	..	U.S.A.
Oklahoma	..	..	U.S.A.
Trinidad	..	..	—
La Brea	..	..	—
Burma	..	..	—
Pangalan Brandon	..	..	Sumatra.
Miri (Anglo-Saxon Petroleum Co.)	..	..	Borneo.
Borneo (Shell Co.)	..	..	Dutch Borneo.
Lankat	..	..	Sumatra.
Java	..	..	—
California	..	..	U.S.A.
Finland	..	..	Baltic.
Las Bela	..	..	Baluchistan.
Assam	..	..	India.
Persian	..	..	—
Roumanian	..	..	—
Caucasus	..	..	Russia.
Neuchatel	..	..	Switzerland.
Val de Travers	..	..	Switzerland.
Palestine	..	..	—
Gilsonite	..	..	Utah, U.S.A.

The names set down above designate certain asphalt deposits that are known and are distributed commercially. The varying characteristics are such that the average engineer cannot tell by appearance what will be their value when used in the manufacturing of waterproofing materials. Certain manufacturers have developed research laboratories in which the best use can be made of bituminous materials. The chemical formulæ of these asphalts vary slightly, but the physical properties are widely different.

The purest form in which asphalt is found is usually as a liquid pumped from the earth, and is known to chemists as being the base of certain petroleum oils.

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Asphalt is found in liquid form, semi-liquid form, solid form, and in the form of asphalt-impregnated stone. The process of refination is to remove organic impurities and volatile oils, leaving a base of asphalt that contains no other matter. California asphalt, refined and sold under the brand of "Floatine," is noted throughout the world because it is 99.86 per cent. pure.

Various kinds of "Floatine" are produced in the refineries of the Paraffine Companies, Inc. These grades of "Floatine" are all equally pure, but are distinguished in physical properties. "Floatine" is produced with varying melting point, depending on its intended use. Penetration under the needle test can be made to vary. The Paraffine asphalt chemists have produced in "Floatine" a product that is almost entirely soluble in carbon tetra-chloride. This last test is made to demonstrate the fact that "Floatine" does not contain insoluble impurities.

Engineers and other users of asphalt water-proofing materials sometimes confuse the meaning of the terms pitch, bitumen, tar compounds, asphalt, asphalte and "Floatine." (This is a proprietary brand which differs as much from ordinary asphalt as bitumen does from tar.) These terms listed in the foregoing sentence are not accurate descriptions of the products which they are intended to describe. In some communities, pitch, bitumen and asphalt are synonymous terms, although in reality pitch may be either a pure or an impure asphalt or a tar compound or a combination of tar and asphalt. Bitumen might be in some communities an asphalt or a tar or a combination of the two. Producers of asphalt, therefore, are interested in the correct use of the word "asphalt" in order to make it easy for those who buy water-proofing materials to get the actual material they intend to use when they specify asphalt.

Mr. Dozier Finley, asphalt chemist for the Paraffine Company, has produced a material in "Floatine" of unvarying uniformity. The refining process is so carefully regulated that day after day in the refinery "Floatine" of the same consistency can be produced which enables the Paraffine Company to make "Malthoid" roofing and dampcourse exactly the same always.

A lot of roofing manufacturers who advertise that they use a natural asphalt, and whose product comes from Trinidad or La Brea, and because of the source of supply, claim superiority, are deceiving themselves and the possible buyer, because it is known to asphalt chemists throughout the world that so-called "natural asphalts" are asphalts which have exuded from the ground, dissolving in their body decaying vegetable matter, sand and earth, and are solid or semi-liquid only because they have lost volatile oils by a natural process of oxidation. Liquid asphalts, on the other hand, which are usually produced in petroleum fields, are just as natural; in fact, they are more natural than any other kind of asphalt, because when they are pumped from the ground they contain the substance which all asphalts originally contain. They are liquid or semi-liquid, and have a varying degree of volatile oils which are removed in refining by a distillation process. It is obviously an advantage to asphalt refiners to procure asphalt that does not contain decayed vegetable matter, sand or other substances, most of which cannot be entirely removed by refining without "burning" the life out of the asphalt.

Nothing written here is intended to convey the idea that certain impure asphalts do not serve useful purposes. Switzerland produces in Neuchatel and Val de Travers Asphalt products that are more or less oxidised and absorbed into soft sandstone or sand-impregnated bitumen. These materials are commonly

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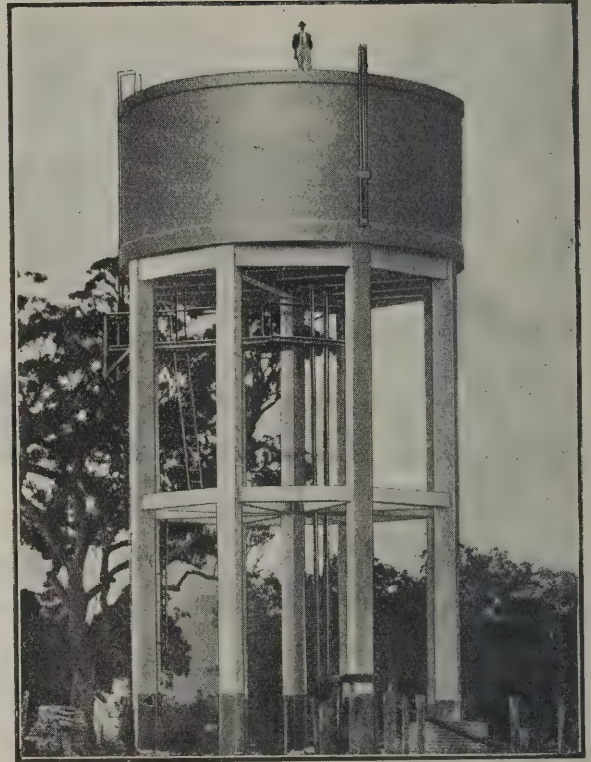
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used for surfacing roads. Even some manufacturers of actual natural asphalts do not attempt to make as many grades of varying consistencies as are required by the Paraffine Companies in the water-proofing business. Some of the big oil producing companies who are extensive refiners of asphalts sell their products largely for surfacing roads. When they require asphalt for water-proofing material, many of them go to the manufacturers of these water-proofing materials, who are usually special refiners, and get the kind of asphalt which is best suited for their purpose. An instance of this is shown in the fact that the Paraffine Companies sell "Pabco" pipe covering, which is applied with "Floatine." "Pabco" pipe covering is used to cover pipes in which petroleum oils are pumped from the oil-producing fields to the refineries. Some of these pipe lines are 300 and 400 miles long. "Floatine" is used because the proper grade will not melt and run when subjected to extreme heat, will not crystallise when subjected to extreme cold, and throughout its life it is adhesive, tenacious, and makes a proper binder between the surface of the metal and the water-proof covering which is intended to resist rust.

A LARGE CONCRETE TANK.

That the advantages of reinforced concrete for structures and buildings are now being realised, is much in evidence, not only in our city and suburbs where many important office blocks, flats and factories have been erected, but its use in our country towns is gradually gaining ground in varied forms, such as tanks, bridges, culverts, storm-water channels, conduits, silos and many other structures where strength and



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Designed by F. W. Edmunds, Esq., in conjunction with Mr. C. A. Reed, M.C.I., Engineer to the Trussed Concrete Steel Coy. (Australia) Ltd., Sydney.

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financiers and builders alike. Herewith we illustrate one of the uses to which it has recently been employed by the AUSTRALIAN MISSIONARY COLLEGE at their farm, garden and manufactory at Cooranbong, near Dora Creek, New South Wales.

Situated on the top of a hill, the water is pumped into the tank from a creek half a mile distant in a gully at the foot of a hill, and forms the water service for the whole of the College requirements. The tank is some 60 feet high from the ground and has a diameter of 30 feet. It contains 12 feet of water with a total capacity of 50,000 gallons. This large head of water is supported on one centre and eight outer concrete columns, braced horizontally midway from ground to floor of tank.

The whole of the work was carried out under the supervision of Mr. F. W. Edmunds, Architect, of 87 Phillip Street, Sydney, by Mr. W. G. Kent, builder, in conjunction with the Trussed Concrete Steel Company's Engineer, Mr. C. A. Reed.

STAGES IN THE MANUFACTURE OF ARMCO INGOT IRON.

In our last issue we dealt with the manufacture of pig iron and in this issue, further stages in the manufacture of Armco Iron will be explained. In the first place a modern open hearth furnace is a shallow pan enclosed by walls and a roof, all built of

highly refractory materials on a foundation of reinforced concrete. Its length is usually about twice its breadth, and its depth about 24 to 36 inches. A modern furnace may range in capacity from 50 to 100 tons, and in it may be produced either steel or Armco ingot iron.

Pig iron, heavy melting scrap, and limestone in properly proportioned amounts, are charged into the furnace by an electrically operated "charging machine," melted, and brought to the desired analysis. These raw materials contain many impurities, such as sulphur, phosphorus, carbon, manganese, silicon, etc., which must be practically eliminated by the open hearth process.

To produce a 90 to 100-ton heat of steel requires from seven to ten hours and a temperature of approximately 2750 deg. Fahr. Ingot iron, inasmuch as it must be purified to a greater extent than steel, requires from twelve to fifteen hours in the furnace, and a final temperature of from 2850 to 3100 degrees Fahr.

As soon as the "heat" is completely melted, and at frequent intervals during its refinement, small test samples are carefully analysed. Chemists and metallurgists have thorough control of Armco ingot iron throughout manufacturing operations. They sample and test all incoming raw materials and reject all materials found to be below the established standards.

The control laboratories are responsible for the analysis of each heat measuring up to the required

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Yet this is the besetting sin of the average advertiser.

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standard, before the boiling white-hot metal can be released to rush with a roar into the great 100-ton bucket-like ladle. The metal is teemed into the ingot moulds through a nozzle in the bottom of the ladle. The ingots produced weigh approximately 5,200 pounds.

Some corrosion-promoting elements, such as copper, etc., found in ordinary raw materials, cannot be eliminated or even reduced in the open hearth process. It is therefore necessary to carefully select all raw materials used in the manufacture of Armco ingot iron. Only such materials which are known to be free from objectionable elements are used. This selection adds materially to the cost of producing ingot iron, but it is only in this way that a pure, rust-resisting iron can be produced in commercial quantities.

One of the most spectacular stages in the manufacture of Armco iron is the rolling of ingots.

The ingot is taken from the "soaking pit," where it has been heated to uniform rolling temperature (approximately 1900 deg. Fahr.), and conveyed by electric power to the "blooming mill." The blooming mill consists of a mighty pair of horizontal rollers driven by a powerful twin-cylinder reversing engine of 10,000 h.p. capacity. The first "pass" through the rollers often results in a loud explosion, frequently accompanied by a fusillade of iron and cinder shrapnel.

The ingot is repeatedly rolled forward and backward. It is turned on its edge, rolled, turned again and rolled, being elongated and gradually reduced in size by each passage through the rollers.

The top roller is driven through a floating spindle and is raised and lowered as conditions warrant. Imagine a mass of metal 18in. by 20in. in cross sections and weighing 5,200 pounds being reduced in a few minutes to a bloom 2½in. thick by 8in. wide and many times the length of the original ingot. One thousand tons of ingots can be rolled every twenty-four hours on this mill.

Blooming mill practice in the rolling of ordinary steel seldom varies. In a specialty mill, however, each grade of material must be treated individually. For instance, in rolling ingot iron the metal must be more gradually reduced. If reduction is too severe, it will result in material which cannot be rolled into sheets.

From the blooming mill the "bloom" is conveyed to a large electrically operated shear, and the rough ends are removed.

The bloom is now cut into two or three lengths and each length given several passes through the "bar mill." When this rolling, which is similar to the blooming mill operation, is completed the result is two or three bars approximately 120 feet in length, 8in. in width and ¼in. to 1in. in thickness. By cutting these bars into short lengths, sheet bars are obtained from which the sheets are rolled.

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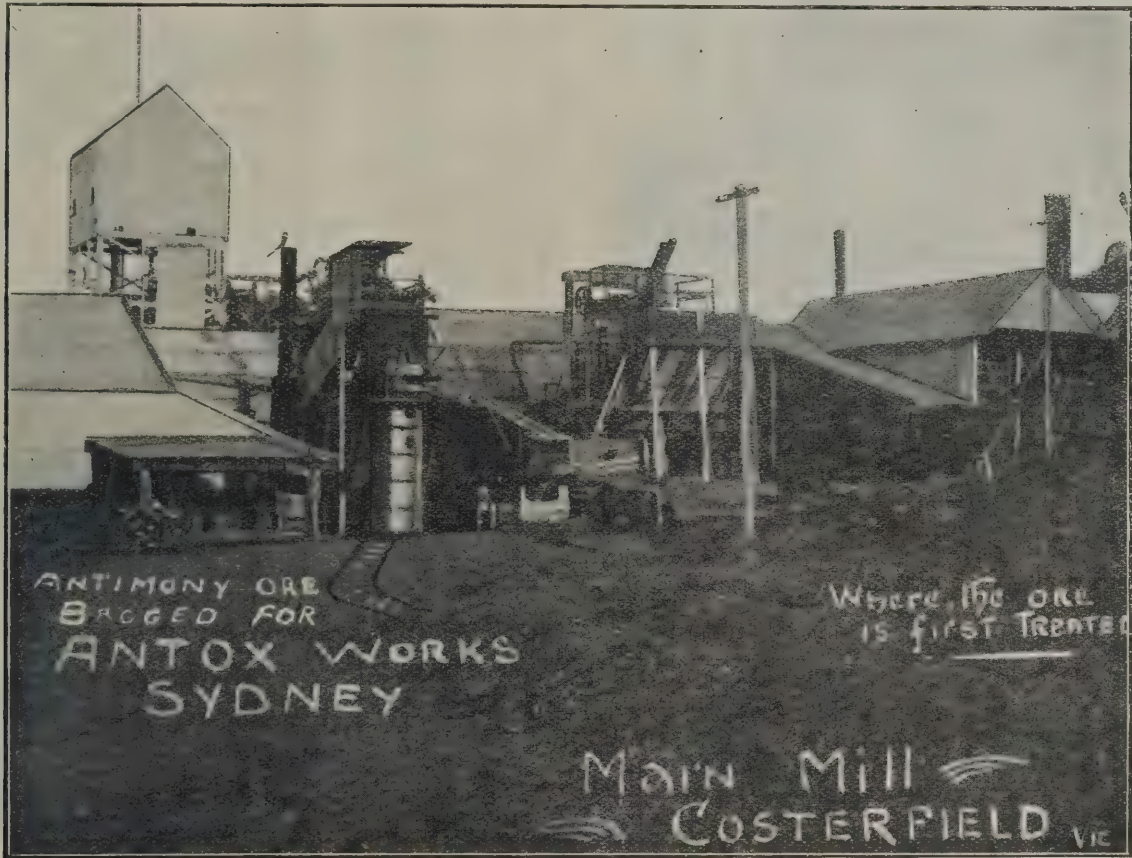
Building Materials and Craftmanship

The whole of the information in this section is supplied by the firms mentioned.

ANCIENT PRACTICES BY NEW METHODS.

Mankind is ever combining ideas, applying principles and scheming to prevent the infallible progress of decay, and we can but delay the inevitable, for that

preservation was much the same as ours. One of their processes to preserve wood was to overlay it with beaten gold or brass. To-day we are doing the same thing: we cover wood with metallic paints, we cover



infallible progress of decay never ceases, day or night, shine or shadow. If we go back to the times of the Egyptians we find that their methods of

metals with anti-corrosive liquids; but, alas! that fiend decay catches up to our best effort; it may be a short run, it may be years, perhaps centuries, but decay wins

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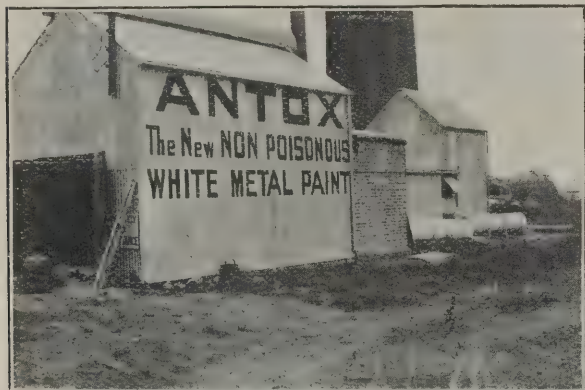
These RADIATORS are the efficient type of Labor-Savers so appreciated by the busy housewife.

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in the end. Conservation is one of the most fascinating subjects to the ingenious mind. When we see a painter at work it seems hard to realise the number of trades that continue to give him his finished product. There are the miners, the farmers who grow the oil seed, the oil refiners, the canister makers, and a host of others who all help to make one finished article.

Suppose we dwell awhile on the mine. In the Costerfield Mine, Victoria, where the antimony ore is mined for Antox pigment, the main shaft goes down



Portion of the Antox Works at Newtown.

a distance of 1,000 feet, and penetrates a distance of four miles in underground workings. Samples of the ore when brought to the surface are assayed by the chemist for its metal content, it is then broken up into pieces about the size of small walnuts, the finer particles are washed and dried. One is inclined to dwell on the description of a mine, but space will not allow.

The small pieces of antimony are then shipped to the Antox Syndicate Ltd., Sydney. Here the process is quite different, the ore is subjected to great heat and a fume drawn off; this fume is metal in oxide form (to test this, subject Antox dry oxide to a fierce heat and it becomes metal again). And when you paint your property, or specify Antox, you give the surface a metallic coating; reverting back to the Egyptians you will see that we are not remote from their ancient methods.

The fuming method of producing oxides results in a much finer division of texture, and consequently the covering capacity is greater. To obtain great covering power without loss of opacity is the aim of the architect and painter alike. These ends have been attained by long experience in the production of Antox, and the saving is indeed considerable. Suppose that the outlay of a company is £630 per annum in

paint, that same area could be covered effectively and just as lasting and in many cases better for £375. Why? Where it takes 42 lb. of whitelead to cover a surface, the same surface can be covered with 25 lb. of Antox. The amount of oil used in pigments vary. In Antox 7½ to 8 gallons per cent. can be used for priming coats and 7 for finishing. The company in February of next year will be turning out 3,000 to 6,000 tons of pigment per annum.

The whiteness of Antox compared with pure precipitated calcium sulphate, which is taken as a standard white, shows that "Antox" reflects 0.3 unit of yellow and is not inferior as a white to the best zinc white or whitelead powder. The specific gravity of Antox is 5.4, and consists almost wholly of tri-oxide of antimony (Sb_2O_3) and in hot tartaric acid is over 99 per cent. soluble, in hydrochloric acid results are much the same.

Under the microscope Antox shows to be an amorphous powder made up of very minute rhombic particles a few thousandths of a millimetre in size; this fineness of subdivision is the determining value of a pigment, because the finer the individual particles are, the greater covering power and opacity the pigment has.

In conclusion, it should be pointed out that the ores used by this company for the manufacture of its oxide



The Expanding Chamber at the Antox Works.

and metal have a very high gold content, in some instances being over 3 ozs. per ton and seldom less than 2½ ozs. per ton. This gold is recovered by a special process in the manufacture of the oxide. It is therefore quite obvious that from this fact alone the Antox Syndicate Ltd. is in a very exceptional position for the manufacture of all antimony products, controlling as it does the cheapest antimony ore in the world.

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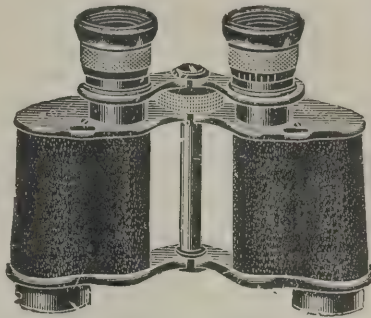
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QUANTITY SURVEYOR

4 Castlereagh Street,
City.

The production of Antox to fulfil the demands of the Geneva Convention for a non-poisonous pigment has already proved to be the base of a high-class paint, and this company is now preparing to enlarge its factory output by erecting works at a cost of between £16,000 and £20,000. At present the Antox paint is being made at the company's temporary works at Newtown, N.S.W.

THE BRITISH THOMSON-HOUSTON CO.,
LTD., RUGBY, ENGLAND.

The following is a summary of the 27th Ordinary General Meeting of the above firm, held on May 30th, and gives an insight into the vastness of their activities.

The Chairman, in reviewing past operations, gave a brief synopsis of the Company's work and said that about 1912 there was a marked improvement in the electrical business of the country and that improvements had been steadily maintained up to nearly the end of the year under review.

It was then mentioned that, although reaction had begun, the year on the whole was a record one. The volume of unfulfilled orders on hand at the end of the year was such that, notwithstanding the fact that during 1921, the orders received were less in volume than for 1920, the output for 1921, that is, the amount billed to customers, was the greatest in the history of the Company. This large output is responsible for the highly satisfactory results appearing in the balance-sheet of the Profit and Loss statement submitted.

Notwithstanding the general depression throughout the country, the volume of orders received by the Company this year to date is over 37 per cent. in excess of the orders received for the corresponding period of 1921.

The Company now has on hand orders to the value of over £2,250,000. Although on the balance-sheet there still appears an amount of £754,000 due to the I.G.E. Co., this has since been liquidated and the only debts the Company has, in addition to Debenture Stock and Employees' Savings Certificates, is sundry creditors, retention, etc.

The scheme covering Employees' Savings Certificates has proved a pronounced success. This scheme was instituted during the year in accordance with a well-thought-out plan which enabled the employees to invest their savings by purchasing Certificates bearing a fixed rate of interest, paying for them on the instalment plan. The number holding these Certificates is now 1300.

During the year the expenditure on factories was well over £450,000, the majority of which was in connection with the new Birmingham factory, the new glass works, which are being erected at Chesterfield,

and extensions to the Rugby plant, all of which will be completed during the current year. The total cost of property, buildings and plant to the end of December was £2,670,000. From this cost there has been written off year by year sums aggregating £793,286, or over 29 per cent. of the total cost.

The buildings and equipment have all been maintained in first-class condition.

In connection with the item appearing in the balance-sheet under the heading of Goodwill, Patent and Licenses, it is of particular interest to most that in the latter part of 1921, one of the B.T.H. most important patents, covering the manufacture of gas-filled type of incandescent lamp, was sustained by the House of Lords, and on January 1st of this year another important patent, covering the so-called leading-in wire, has been sustained. From this decision there has been no appeal.

This item, in reality, consists of sums paid for the patents of licenses, the actual value of which is much greater than the figure appearing in the balance-sheet. No amount is included for good-will.

The profit for this year, after deducting all expenses and charges, other than interest on debentures and loans, is £509,278, an increase of nearly £40,000 over the profits of 1920. To this there is added the amount brought forward from the previous year, namely, £225,891, making the total amount to be dealt with £735,160.

Owing to the great expansion in the business, it has become necessary to get additional office accommodation, necessitating the removal of the offices in Cannon Street, and new quarters being established at Crown House, Aldwych, which are more commodious and convenient, and, incidentally, in a district of which a number of other engineering firms have their offices.

During the year, on October 29th, the memorial to the employees who fell in the Great War was unveiled with appropriate ceremonies by Field-Marshal Sir William Robertson, and dedicated by the Ven. Claude M. Bladgen, Archdeacon of Warwick and Rector of Rugby.

The local representatives are the Australian General Electric Company, Ltd., Wentworth Avenue, Sydney.

LIFE AND BEAUTY.

All parts of the world are at the present time labouring under some economic trouble or other, but out of these troubles the people of all lands, and particularly Australians, are learning, perhaps slowly, the old adage that cheapness is false economy. Everyone desires quality and that is why the highest quality goods are always dearer, but in all cases they give better results.

This truism applies with force to the world-famous "RIPOLIN" paints. It is somewhat difficult to dilate

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BROKEN HILL—WHITE & HOSIER.

upon the enamel manufactured by this famous house, because it is recognised as being at the head of its class in all countries. This may appear to many to be a big claim but it is simply because the Ripolin Company are not general colour manufacturers, but only make enamel and is justified by the fact that the walls of the National Bank, in the Equitable Buildings, Sydney, were painted with No. 1 white "Ripolin" enamel 28 years ago when the building was constructed, and an examination to-day will show that the claims of the makers for longevity and durability have been proven.

A few weeks ago all the public passage ways, lavatories, etc., of the Equitable Building were painted throughout with No. 1 white "Ripolin" enamel paint by Messrs. Althouse and Geiger, and an examination of the work will show that for beauty it cannot be surpassed.

For outside use it is claimed that "Ripolin" is more durable than paint or varnish, and considering that it is being very largely used by motor body builders for motor cars (the writer saw an individual order from an Interstate user this week for 238 gallons), it will be seen that this claim also is justified. It is generally

RIPOLIN Again Victorious



The Equitable Buildings, George St.,
painted 28 years ago with Ripolin.

The following is a copy of a Letter recently received:—

Equitable Building,
350 George Street, Sydney,
Mr. Lindsay A. Cormack, 5th July, 1922.
Factory Representative,
4 Underwood Street, Sydney.

Dear Sir,

With reference to the Ripolin paint used in the Equitable Building, we beg to confirm our verbal intimation to you that the enamel at present in the North Office, on the ground floor of the Sydney Equitable Building (National Bank of Australasia Ltd., Lessees) was applied there when the building was completed, some 28 years ago, and has not been painted since and is still in a fair state of preservation.

Yours faithfully,

(Sgd.) JOHN REID & SON.

The inside walls of the National Bank of Australasia, which occupies the northern ground floor section, *were painted 28 years ago with Ripolin—to-day that Ripolin is still on the walls*, slightly discoloured, but in a *good state of preservation*. Two months ago the whole of the public passage ways, lavatories, etc., were painted with No. 1 White Ripolin Enamel. Ripolin was specified from an open field *and it was the highest priced paint submitted*.

L. A. CORMACK

Factory Representative

::

4 Underwood Street, Sydney

(off 35 Pitt Street)

Telephone B3284

Interstate Sub-Agents—Messrs. S. J. SQUIRES & CO. LTD., 171 Elizabeth St., Brisbane; Mr. LOUIS J. EGLETON, Viaduct Buildings, 379 Flinders St., Melbourne, Vic.; Messrs. CLARKSON LTD., 122-124 Rundle St., Adelaide, S.A.

admitted that motor cars in this country are subjected to varying climatic conditions, with the result that they are often in the painter's hands and the fact that an increasing number of motor car importers are standardising on "Ripolin" is sufficient to show that they are satisfied it is superior to paint and varnish.

Although "Ripolin" as a p.c. item is somewhat higher priced than its competitors, it will be found it is cheaper than other enamels inasmuch as it requires less to cover the same work. This is simply owing to the super quality of the product, and is a big factor in such a large job as the painting of the Equitable Buildings mentioned previously.

"Ripolin" has been adopted for the past 30 years in France for the exterior painting of railway carriages. Amongst its users are the Eastern State, the Midland, the Northern, Paris-Orleans, the P.L.M. and the Wagon-lits railway services. As a matter of fact, the French house recently issued a booklet in which appears the names of nearly 200 railway and tramway companies which have been using "Ripolin" enamel for many years. It has also been used for the exterior of trams in Australia and has been used for interior work on the New South Wales Railways for nine years.



The Equitable Buildings,
Sydney.

Architects will readily appreciate the fact that an enamel that can stand up to outside conditions so well is practically everlasting indoors.

The agent for "Ripolin" paints is Mr. L. A. Cormack, of 4 Underwood Street, Sydney, and he holds many letters from architects expressing appreciation of its high qualities besides holding all the principal Government contracts

for the supply of high-grade enamel.

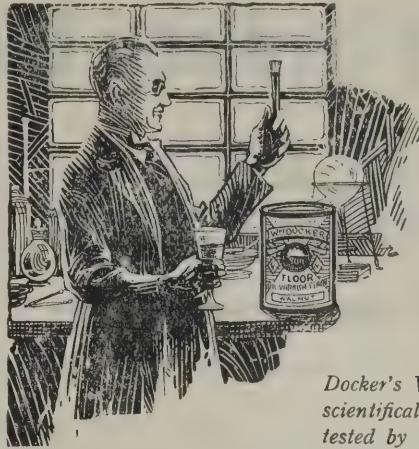
An examination of the white enamel on the bank walls show it to be discoloured slightly, but, nevertheless, in a very good state of preservation after its 28 years' standing.

Is there a similar case on record? We rather think not.

PAINT-MAKING IN AUSTRALIA.

Paint is one of the oldest of the world's products. The early Egyptians were past-masters in the art of "mixing," and there were, so our archæologists tell us, no colours which were unknown to them. So far as we can tell, the manufacture of oil paint was not known, but they confined their operations to dry colour, and it was a poor workman who did not know the value and use of the various pigments.

In passing through countless generations, the art of colour-mixing has been gradually improved until it has reached a stage of perfection.



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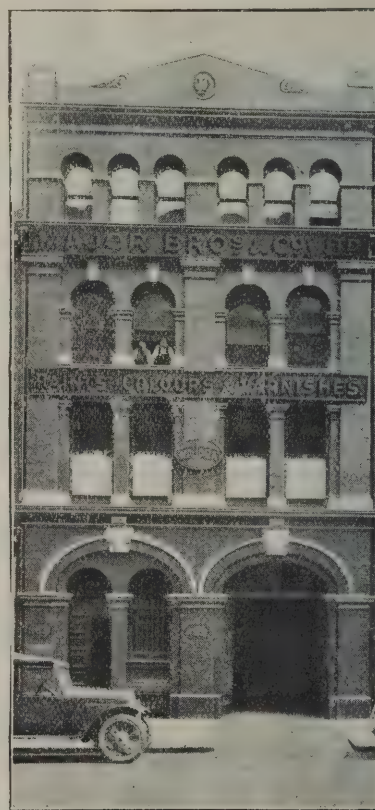
Tels. M 1922, M 1923

The average Australian, if he were asked about the composition of paint, would probably say that it was a colouring matter with a proportion of whitelead and oil; but he would insist that the chief ingredient was whitelead. Broadly speaking, the answer would be correct, but it does not go far enough. As a matter of fact, in a great many paints whitelead cannot be used at all. The mixtures are based on natural ores toned down with other ingredients, prepared, and blended with oil.

Sixteen years ago J. A. and E. Major commenced the manufacture of paint in a small way. Since then the efforts of these pioneers have been crowned with success. The basic ingredients of many of the paints manufactured by MAJOR BROS. & CO., LTD., are the natural products of Australia. Red oxide, Venetian and Indian reds, yellow ochres, raw and burnt umbers, purple browns, and graphite are practically all mined in New South Wales in a nearly pure state, some of which assay from 84 per cent. to 90 per cent. These are obtainable principally from the western districts around Orange, Dubbo, Wellington and Mudgee. Zinc oxide, whitelead and sublimed lead now also figure among the bi-products of the Australian ores.

The consignments of dry colours or earths are sent to the works of the company at Johnston's Bay and Snail's Bay, where they are graded, analysed and subjected to various forms of refinement and calcination. They are then ground and passed to another department, where the colours are mixed with raw linseed oil and whitelead or zinc white. The mixture

is then ground into a paste by being passed through a triple graphite **rolling** machine, and is later thinned down and tinted to the required shade. These colours, which are most popularly used by the painter, and which are the most permanent, are classified as mineral or earth pigments.



Major Bros.' Headquarters, Sydney.

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A.R.I.B.A. Twenty years general all-round experience (five years London), desires JUNIOR PARTNERSHIP in well-established firm of Architects. Willing to invest £1000 for part share. Replies (confidential) to "G.F.," c/o. *The Motor Press of Australia Ltd.*, 16 Pitt Street, Sydney.

In another branch of the works the chemically prepared colours are manufactured. Chrome yellows, Prussian and Chinese blues, Brunswick greens, red, etc., are prepared by a method of precipitation and chemical reaction. The various chemicals are made into a solution with water in huge vats and mixed together. The reaction between the chemicals gives a

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A bright little Monthly for the debonair youths who enjoy life on the open road and a trusty motor bike.

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A Complete record in numerical order, of all cars and owners registered in New South Wales each week, with changes, transfers and cancellations.

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very fine precipitate of chemically pure colour. The mixture is then filtered, dried and ground to powder form. In some cases the mixtures are ground in oil and used in a similar manner to the mineral pigments.

On account of its poisonous properties, arsenical of Paris green, which is used as an insecticide, is prepared under special conditions.

Majora mill white and water paints, brands which have become favourably known in Australian trade circles, are prepared on special formulæ of Messrs. Major Bros. The mixture of ingredients is quite original, and is stated by experts here and in England and America to have no equal. The material, which is unique in its class, has met with extraordinary success, and was the outcome of scientifically conducted experiments carried on for many years, and may be mixed with both oil and water, which to the layman would appear an impossible feat.

This mixture is especially fine for outdoor work, and the proof that it is considered equal to any imported paint may be gathered from the fact that it has been used for decorating the Sydney Art Gallery, the Customs House, the Hotel Australia, and the Theatre Royal.

For more than fifteen years the firm has experimented, in order to find a perfect anti-fouling composition for ships' bottoms and at last the correct thing was found, and it is claimed to be among the best of its kind. The ship's paint department is specially catered for and huge mixers, capable of holding

two tons of liquid, are constantly in use preparing pigments which will resist the wear and tear of the sea.

The manufacture of varnishes, stains, and enamels is carried out at the works at Cabarita. These materials are produced from the sap of trees. Many varieties of gums are imported from New Zealand, Africa, and Java, and after grading are subjected to various refining processes. For varnish which is required for the better classes of work West African copals and New Zealand kauri are used. For varnishes for general household requirements East India and Java gums suffice.

A striking feature is the amount of scientific research required to maintain the high standard of production. Chemists engaged at the works analyse and check all material before and after its manufacture. A research chemist is continually experimenting with new processes, and he keeps a record of the results of all tests.

Owing to the absolute impossibility of obtaining arsenical green from overseas during the war, and it is an essential basic colour, Major Bros. set about solving the secret of its manufacture. They were successful and to-day turn out a product which is quite equal to the imported manufacture of pre-war days. This particular firm made great progress in the development of paint making as an Australian industry during the world struggle and now Australia is practically independent of the overseas markets.

Box 2613 G.P.O., Sydney.
Telephones: B 6741, B 6742.

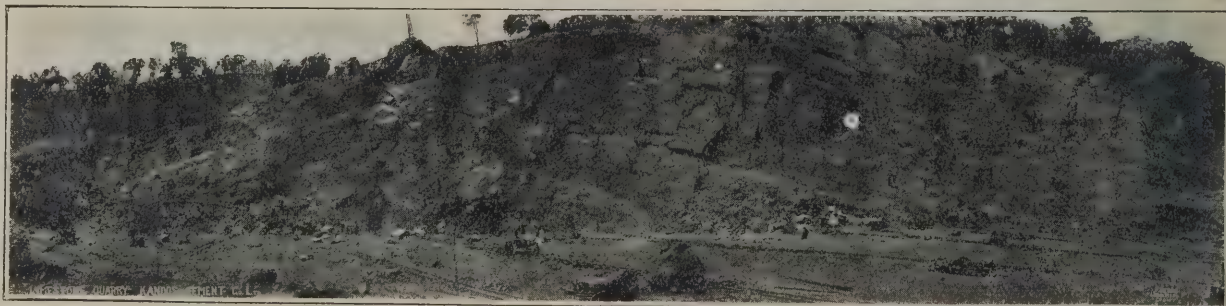
Works: KANDOS.

Telegraphic and Cable Address:
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Codes:
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Registered Office:
PERPETUAL TRUSTEE CHAMBERS
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VIEW OF LIMESTONE QUARRY, CARWELL CREEK, KANDOS

Building Materials and Craftmanship

The whole of the information in this section is supplied by the firms mentioned.

THE LAST WORD IN GARBAGE DESTRUCTORS.

The disposal of garbage is just as urgent a problem in Sydney to-day as it was in Babylon, Rome, London, or any other great city of any age of the world's history. The city is dotted over with "garbage tips," some pre-historic, so to speak, others but lately closed, and others still being utilised, but one and all, running amok among the lives of the children whose doom it is to be located near them, and sapping that of the adults who have to spend their lives in the vicinity.

With the introduction of the modern flat system of life and the vast increase in the number of monster hotels in all the big cities of the world, the garbage problem became more acute than ever. The detached cottage may be able to keep a garbage tin in the back yard, two or more days. In the vast hotel, or the flat building where, as in America, 60 to 120 families may be housed under the one roof, it is impossible if the proprieties of health and decency are to be observed. Some method of disposing each day of the garbage became essential to the system of life that had been adopted by a tremendous proportion of the population.

THE KERNERATOR was the result.

The alleged rapid spread of Greek wild fire in the Turkish fleet at Lepanto was nothing to the rapidity with which this excellent solution of the garbage problem swept through the United States. Great hotels tore their places to pieces to instal it. Huge apartment houses, as nests of flats are called in that country, called in architects to make the structural alterations necessary for the convenient placing of the device, so that its advantages and refinements would be available to all who occupied space in the building.

Thousands and thousands of beautiful homes, country mansions, suburban palaces, factories, warehouses, departmental stores abolished the dustbin and the garbage tin. A neat little hopper door was installed where most convenient, and through it disappeared everything that was superfluous, unseemly, unwholesome—garbage, rags, old shoes, wilted flowers, the cans the fruit and the salmon once occupied, old papers,

obsolete magazines, everything in the form of refuse.

One of the most significant features of the rapid spread of this device was the number of hospitals that installed it immediately it was available. These institutions are still installing them.

The Kernerator is the complete and ideal solution of the problem of garbage, because it destroys all waste matter where it originates by the best means possible—incineration, and without expense. It does away with the intolerable nuisance of an increasing pile of rubbish in the basement. It abolishes the evil-smelling garbage can from the kitchen or scullery. It does away with the refuse heap in the back garden. It has enormously increased the healthfulness of thousands of tenement houses in crowded cities like New York, Chicago and New Orleans.

In Sydney it is being adopted in quite a number of warehouses and factories, and a number of our best architects are making provision for it in the buildings they have under construction.

The incinerator is practically air-tight, both fire and ash doors being emery-ground to fit flush with the frame. The hopper door through which the rubbish is dumped cannot admit smoke or smell when opened, as the vent is automatically closed by a curtain operated by the opening of the hopper door. It might, of course, be argued that smoke and odours would percolate through the hopper door when closed, but there is not the slightest evidence of anything of the sort ever having occurred in any of the thousands and thousands of buildings where the apparatus has been installed. If the work is done correctly the thing is impossible, as the draught is always into and up the flue, and is invariably strong enough (if the work has been carried out to specification) to blow out a candle.

Briefly, the Kernerator consists of a brick enlargement of the chimney in the basement, into which rubbish and garbage are dumped through neat, convenient little hopper doors placed in the flue or chimney on each floor. These doors will not admit the passage of a parcel too large for the flue, so if the package of garbage can pass through the hopper door it is certain to fall into the incinerator in the basement.

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combining COMFORT with ECONOMY, "CRANE'S" RADIATORS for Gas or Electricity are the acme of perfection. Obviate the necessity for cleaning up after use. A fine range of designs and colors is stocked, and working models can be inspected upon application.

These RADIATORS are the efficient type of Labor-Savers so appreciated by the busy housewife.

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LETTERBOXES AND 'PHONES COMBINED. TELEPHONES FOR APARTMENT HOUSES OR FLATS.

The conditions of life in the principal Australian cities are every day approaching those that exist in American centres. Flats or Apartment Houses have

They have designed a Telephone System which is combined with letter-boxes—one for each flat. In each Apartment House there is a vestibule with a door opening out on to the street, and a second door, which is normally locked, gives admittance to the private corridors of the Apartment House.



Fig. 1.
Vestibule Letterboxes
and Telephone

become an absolute necessity in several of our largest cities, and are likely to increase numerically, particularly in those suburbs that are immediately adjacent to the city proper.

"An Englishman's home is his castle," but he is faced with a difficult problem when he undertakes life in an Australian Apartment House. Few sets of Flats or Apartment Houses are so pretentious as to warrant a porter in the vestibule to challenge the entrance to

A caller has no option, he cannot pass this second door unless it is unlocked by the occupant of one of the flats for the express purpose of admitting him.

In the vestibule is a set of letter-boxes, with which is associated a telephone, as in Figures 1 and 2. Each tenant has a letter-box for his mail, and associated with it is a button (see Figure 2). These telephones are connected to the telephones, which are fitted, one in each flat. A caller for "Mrs. Brown" would see her



Fig. 2.
Vestibule Letterboxes
and Telephone

the house of pedlars and other persons whose presence the occupants may regard as undesirable.

But the Stromberg-Carlson Telephone Manufacturing Company, of Canada and the United States, has solved the problem, and Flat-owners may now, almost as effectively, regulate the admission of callers to their domains as our forebears did by moat and drawbridge.

card at the back of the glass in her letter-box, and would press the button associated with that letter-box (see Figure 2). Mrs. Brown's telephone (Figure 3) would ring, and she would answer and learn the requirements of the caller. If she decided to admit the caller to the apartment house, she would depress one of the buttons on her telephone, thereby

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Telephone: M 1586

electrically unlocking the door leading from the vestibule to the corridors. The door would close and lock automatically after the caller had passed through.

The second button on the telephone (Fig. 3), is to connect to the Caretaker or a Janitor's switchboard, at the rear of the building (see Fig. 6). This Janitor's service provides the occupant of the flat with facilities for dealing with tradesmen, and may save her many a weary step to interview the laundryman.

As an alternative to the Janitor's telephone switchboard, a simple annunciator bell service may be provided. (See Fig. 7.)

If neither of these is desired, then the flat telephone is equipped with one button only, which electrically controls the vestibule door.



Fig. 3.

No. 1148.
Apartment
Telephone

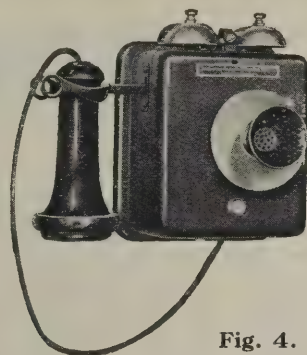


Fig. 4.

No. 965.
Apartment
Telephone

The button shown immediately under the receiver in Figures 1 and 2, is to provide telephonic communication between the vestibule and the Janitor.

The letter-boxes, which are furnished with a handsome golden-lacquer finish, are of the flush type, and are in "gang assembly" of three boxes per gang.

Figure 1 shows a variation in style, in that the buttons are not mounted in the letter-boxes, but on a separate panel which has, opposite each button, a handsome clip to hold the tenant's card.

It will thus be seen that the owner of each flat is mistress of the situation. Through the telephone she can decisively and quickly decline the overtures of the most persistent canvasser, while her friends on their

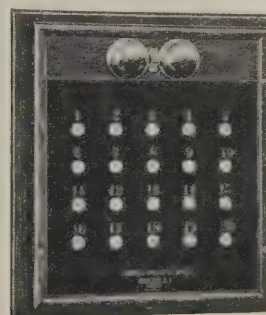
social call can ascertain if Madame is in without being put to the trouble of going up to the flat—say, on the third floor.

Fig. 5.
No. 10.

Apartment
Telephone

Fig. 6.
Janitor's
Switchboard

The telephones shown in Figures 4 and 5 are alternatives to Figure 3, which is of the flush type and of a golden-lacquer finish. Figure 4 is of the residence type, wall set, while Figure 5 shows the handsome table pattern telephone.

Fig. 7.
Janitor's
Annunciator

Among the many good features of these telephones is the rope-stranded, moisture-proof cords, unbreakable ear-caps, mouthpieces, etc., and the most superior finish. The same parts are used as are employed on

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Tels. M 1922, M 1923

the Stromberg-Carlson long-distance telephones, which are used by the Australian Government in all States of the Commonwealth, by the tens of thousands.

L. P. R. Bean and Co. Ltd., of 229 Castlereagh Street, Sydney, are the sold agents in Australia for the Stromberg-Carlson Telephone Mfg. Co.

MODERN CONSTRUCTION.

The tendency at the present time is towards the extensive use of cement and concrete for building purposes, and there is no doubt that this method of construction is rapidly gaining favour in all countries. Wherever one goes in the outlying suburbs of Sydney giant factories are to be seen in course of erection, and an examination will show that concrete is playing by far the biggest part in this activity in our industrial life.

Concrete Floors.

Concrete floors, no matter how carefully laid, will almost invariably dust up heavily when subjected to wear unless some special precaution is taken. This not only results in rapid deterioration of the floor, but causes a great deal of damage from the dust which rises into the atmosphere. The most permanent method of preventing this condition, and the most economical, is to incorporate a hardening element into the surface of the finished floor, and for this purpose METALCRETE HARDENER should be used. The use of Metalcrete does not in any way alter the method of laying the

floor, and the result is a firm, wear-resisting, dust-proof surface. Metalcrete is composed of carefully selected metal particles, chemically treated, which expand on coming into contact with moisture, and hermetically seals the pores or voids prevalent in cement work.

According to the purpose of the floor and the usage it will be called upon to withstand, Metalcrete, from 1½ lbs. to 4 lbs. per square yard, mixed with Portland cement in equal proportion by weight, is evenly distributed over the surface of the concrete as a drier, well floated in, and steel trowelled to a smooth, hard finish. For ordinary pedestrian traffic a mixture of 1½ lbs. to 2 lbs. per square yard is recommended. For vehicular traffic and general factory wear and tear the most suitable mixture is from 2 lbs. to 3 lbs. per square yard. For extraordinary hard usage a mixture of from 3 lbs. to 4 lbs. is necessary.

A dependable method of hardening and dust-proofing concrete floors does more than cover the surface; it combines chemically with the cement, making the top layer of floor hard, impervious, and wear-resisting.

Such is the action of LIQUID METALCRETE, a liquid floor hardener, applicable at small expense to new or used concrete floors.

Tests have shown that Liquid Metalcrete increases the wear resistance of concrete floors 30 to 50 per cent., renders them proof against oils, alkalis, dilute acids and water. All this is accomplished without changing the appearance of the floor. The concrete is chemically transformed into a crystal, hard, fine-textured floor.

By using Liquid Metalcrete the voids in the concrete are filled with hard, insoluble compounds. This completes the bond between the sand and cement and gives a dense, extremely hard-wearing surface.

Liquid Metalcrete is a simply applied treatment for dust-proofing and hardening concrete floors. Anyone can do the job with an ordinary broom. The floor, whether old or new, may be cleaned after the workday is over, and a coat of Liquid Metalcrete applied. Next morning work or traffic can go on as before. Each night a coat can be applied until three are on, and then the floor is ready for practically any service.

Concrete floors treated with Metalcrete are practically everlasting.

Long Life Cement Paint.

The widespread development of stucco and cement exteriors for buildings of every character has created

Board of Architects of N.S.W.

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COMPETITIVE DESIGNS are invited for (a) the Seal of the Board, (b) the Certificate of Registration.

Designs to be delivered on or before 12 o'clock noon, on Saturday, 11th November.

Conditions of Competition may be obtained from the Registrar, Board of Architects, Education Building, Loftus Street, Sydney. (Y5227)

a demand for a coating which can be successfully used over such surfaces, not only to waterproof the walls, but to preserve their texture and equalise the uneven appearance due to variation in material and application, and in many cases to add also a colour or tint for artistic effect.

The use of ordinary paint with linseed oil cannot be made satisfactory over masonry surfaces. The oils will combine immediately with the alkalies in the cement forming a saponified compound, which is soluble in water, and continued rainstorms will eventually destroy the coating. Efforts have been made to overcome these troubles by the use of various chemicals intended to change the alkali into an inert

material, but the varying density of each wall meant that a different solution was necessary for different parts of the surface. Where the solution was not exactly sufficient to neutralise the alkaline action it weakened the bond of the cement, and chipping and scaling of the paint film and cement was the result.

After careful consideration of these objections LONG LIFE FLAT CEMENT PAINT has been scientifically compounded. The pigments and vehicle are not affected in any way by the constituents of cement; they have, on the other hand, a decided affinity for them. This coating is both waterproof and decorative, and can be applied to brick, tile or stone as well as cement, and penetrates the pores to an extent that becomes an



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integral part of the surface without in any way destroying its texture. It overcomes any lack of uniformity in surface shading, and gives a soft, flat finish of the desired tone.

This cement paint is being extensively used for painting the exterior walls of picture theatres, and has been used on many of the biggest theatres in the metropolitan area. An example of the **work is to be** seen at the premises of Arthur Rickard and Co. Ltd., Sydney. Extensive areas were covered at the Broken Hill Steel Works at Newcastle with Long Life Flat Cement Paint in July, 1920, and has given every satisfaction.

Messrs. Rosenfield and Co. Pty. Ltd., 352 Kent Street, Sydney, are the agents for the lines mentioned in this article.

SAVING TIME AND MONEY.

Modern conditions are responsible for the introduction of numerous labour-saving devices, but in many cases these devices are beyond the means of the average man. A time-saving device which is also economical is THE JOKER non-contact bath heater, which is illustrated here-with.

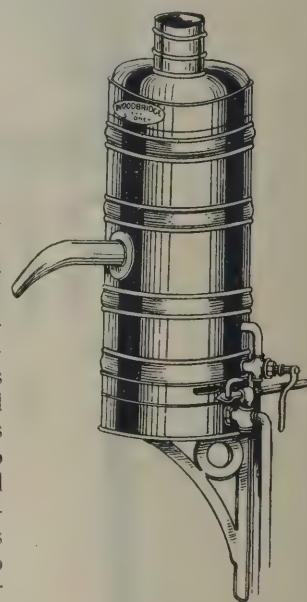
This heater is manufactured from the best hard-rolled copper, with brass fittings and brass ring and bracket. As all the fittings are of brass there is no possibility of rusty and dirty condensed water dripping on to the bath, and this is a matter of importance to the housewife. The water from this heater is so clean that it can be used for both drinking and cooking purposes, and this makes it an ideal water heater for making tea in factories or workshops.

"The Joker" is fitted with special fool-proof, safety combustion taps, so made that the water is running through the heater before the gas can be lighted. It is a high-pressure heater, and may be obtained with or without a shower. It is made in seven sizes, from a small automatic heater suitable for the surgery or the hairdressing saloon to the automatically controlled hot-water service capable of supplying hot water to all parts of the house.

It is manufactured by the inventor, W. H. Woodbridge, at 43a Edward Street, Redfern, and is obtainable from all the leading houses.

MERCANTILE AND INDUSTRIAL BUILDINGS OF CONCRETE.

Boards of directors, when confronted with the necessity of choosing a type of building that will best meet the needs of their industry, consider every factor likely



"The Joker."

to affect the desirability of the proposed structure. Such things as fire-safeness and consequent low insurance, freedom from maintenance and low depreciation, adaptability, speed of construction regardless of season, permanence and sanitation are desirable factors. Each must be considered from the standpoint of its proper relative importance, although to many of them no definite money value can be given. Nevertheless, all are susceptible of being capitalised.

To-day the merits and economies of mercantile and industrial buildings are judged largely in the cost accounting department. The annual balance sheets will show that the first cost of a structure is only one item, and not necessarily of first importance. It is ultimate cost that will test and prove economy. Ultimate economy dictates the choice of that type of construction on which freedom from depreciation and maintenance, low insurance and favourable influence on production will, by comparison with some other type of construction, in a short time, more than compensate for any probable additional first cost.

Employees' welfare must be considered. Buildings which are sanitary, well ventilated and lighted, and hence provide healthful quarters for workers, are certain to contribute to profits because of the contentment developed among the workers and the consequent reduction of labour turnover. A sense of security is felt by owners, operating officials and employees in the knowledge that the building which houses them and their industry is proof against destruction by fire, tornado and earthquake. It is worth money for owners and employees alike to know that none of these visitations can suddenly wipe out the industry on which they are dependent, with the resulting loss of time, money, patronage and prestige that may have taken years of endeavour to build up. Attainment of these desirable ends is certain to favourably influence financing and credits. Permanent fireproof buildings are also of distinct advertising value to their owners. With concrete buildings these desirable ends are secured in the fullest measure.

A comparison of the initial cost of fireproof buildings will almost invariably show the low cost of concrete structure. A modern concrete mercantile or industrial building of a certain size and type, built to serve a specific purpose, may cost considerably more than a similar building of another type of construction, and although the intending builder may be tempted to favour the seemingly cheaper building when it is shown that the first-mentioned type costs less per square foot of floor area per annum for interest, depreciation, insurance, repairs and all other annual charges than the building of lower initial cost, the difference in first cost loses its importance. Fortified with these facts, the

board of directors can hardly avoid adopting that type of construction for his buildings which will place his concern on the most profitable economic basis through the elimination of all avoidable annual charges.

It is not possible to anticipate every event that may delay the construction of a building. Fabrication and shipment of necessary materials may be interfered with, labour conditions may change so as to vitally affect progress and cost of construction. Thorough organisation takes precautions to reduce many of these possible happenings to a minimum; nevertheless, the unforeseen frequently happens. If the intending builder has chosen concrete construction, many of these contingencies are eliminated or reduced to a minimum. Much of the necessary material required for concrete construction is usually near at hand. The structural parts of a concrete building are built in place. Distant shops and uncertain transportation need not be depended upon for their completion and delivery. Materials arrive in bulk and do not require special equipment for transportation; in fact, transportation is not a large

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item because the bulk of materials is usually near at hand. Motor lorries may do most of the hauling. Most of the labour required is of the less highly specialised kind. It can usually be obtained near where the building is going on. Practically all materials may be ordered as soon as preliminary requirements have been decided upon, thus disposing of any uncertainty as to the materials market. Equipment necessary to erect concrete buildings is of the simplest kind. There are no heavy structural members to be handled. Floors and columns are cast simultaneously, and possibility of accident is reduced to a minimum.

An estimate of the first cost of a concrete building can be made with an unusual degree of accuracy. The owner thus secures the benefit of a minimum charge for contingencies in the contractor's bid or the benefit of low cost in a cost-plus contract.

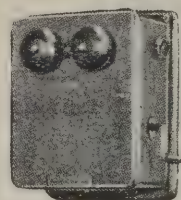
One of the first things a board of directors wants to know is how long it will take to build. Desire to immediately increase production, desire to meet an existing demand, desire to get invested capital earning money at the earliest possible moment have placed a new value, a premium, on speedy construction. The comparative simplicity of concrete construction and the availability of needed materials are reasons why concrete buildings may be quickly erected.

An estimate of the value of speedy construction from the standpoint of earlier occupancy and operation of newly organised business may easily be made. To be conservative, assume that two months may be saved in time of construction by using concrete. This will make

possible a two-months' earlier occupancy of the building and a like earlier active operation of the invested capital, which would therefore be able to earn its interest during a period that would otherwise be a total loss. This shortening of the period of pre-occupancy idleness and the hastening of the end of the early development period is directly creditable to the greater speed of construction possible with concrete.

Total loss by fire is unlikely to an industry housed in a concrete building. Contents may, of course, be damaged or destroyed, but records of big fires have shown that, even when such contents are of highly inflammable character, the injury sustained by concrete buildings is smaller, and their salvage value higher than for buildings of any other type. In the case of total destruction of contents, the concrete of the building seldom suffers more than minor injury, if any.

On a building subject to deterioration, maintenance and depreciation increase from year to year—in other words, no matter how carefully or systematically maintenance may be performed, the building can never be made as when new. Maintenance of those parts of a structure which can be replaced may be carried on indefinitely, but many of the most vital parts of a building are practically inaccessible, therefore do not permit easy replacement. Nor can such parts always be reached with treatments or coatings that would tend to prolong their useful life. It is therefore impracticable to maintain indefinitely buildings whose vital parts are subject to rust or rot.



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Stromberg Carlson Magneto Table Telephones

HAND COMBINATION AND
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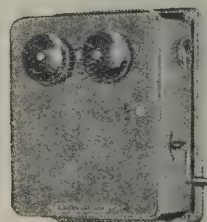
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NEWCASTLE—P. SHARP (Electric Signals and Telephone
Co.) 58 Maitland Road, Islington.
BROKEN HILL—WHITE & HOSIER.

Concrete grows stronger with age. Many city building departments recognise this by allowing greater loads to be placed on a concrete building several years old than would be permitted when the building was new. Because of their ability to resist the usual destructive agencies, concrete buildings require but little maintenance, and, for all practical purposes, are permanent. They do not require painting; there are no joints to be pointed up, no worn-out or rotting structural parts to be removed and replaced, no sagging or warping of the floors or floor beams.

Concrete floors will wear indefinitely, and their smooth, dense surface is easy to clean and keep clean. Germicidal or other cleansing solutions may be used on them without fear of injury. Concrete floors in a concrete building maintain their original level. Machinery mounted on them stays in adjustment longer; shafting keeps in line. The efficiency of concrete buildings does not therefore grow less with time, while in a building subject to deterioration there is the inevitable reduction in operating efficiency.

In comparing the economy of various types of buildings, maintenance may be taken as an average of 1 per cent. per year of the cost of the building. When this charge is capitalised at 6 per cent. it will be seen that over £16 more per £100 original cost could be spent for a maintenance-free concrete building than for one of depreciable type. Yearly maintenance, however, must be considered separately from gradual depreciation which, after a term of years, renders the structure unfit

for use, regardless of the maintenance done on it.

As concrete buildings are now designed they have great reserve strength. The unit stresses use in designing them are very much below the stresses to which concrete may safely be subjected.

Concrete buildings possess many qualities that make them most adaptable to practically any occupancy. It is difficult to express in pounds and shillings the value of certain qualities inherent in a concrete building. It is evident that buildings in which people work should be sanitary. Sickness, poor health and generally low vitality of employees affect in a vital way, their efficiency, and therefore the efficiency of the business or industry. Concrete construction affords the most sanitation. Monolithic floors, columns and beams provide no recesses where filth may lodge. The dense, smooth surface of the concrete is non-absorbent; cleansing solutions may be applied in any quantity to maintain surface cleanliness, and concrete floors will protect lower stories from water damage. There are no interwall or interfloor spaces where rodents may lodge or nest; no hidden spaces inviting the accumulation of vermin, rubbish and filth to propagate disease germs.

While industrial buildings are primarily designed to serve in the best possible manner a certain definite use, they may, nevertheless, be made architecturally attractive at small expense. This will greatly improve their appearance. Ornament may easily be added in the form of concrete cornices, balustrades and raised or

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Set, as illustrated, consisting of:—

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Compasses, 6 in. double jointed, with needle point and lengthening bar.

Divider, 5 in., with fine adjustment.

Bow Pencil, 3 in., double jointed, needle points.

Bow Pen, 3 in., double jointed, hinged nib and needle points.

Spring Bows, set of 3. Pen, Pencil and Divider, needle points and central adjusting screws.

Ruling Pens, 5 in., with hinged nib.

Ruling Pens, 5 in., new patent, swivel nib, and large indexed adjusting screws. Spare leads and needles.

Price of Complete Set, £7/7/-

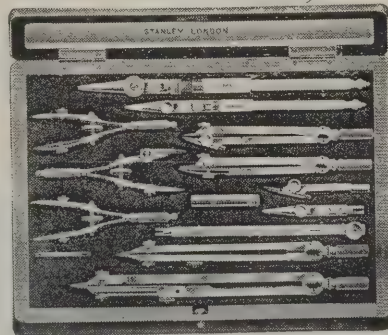
Set, as above, without Bow Compasses and Hinge to Nib of Small Pen, £5/-/-.

Being made by automatic machinery, all parts are standardized and replacements can be supplied at any time.

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depressed panels. Proper attention given to the selection of aggregates, leading to special exterior finish, will result in pleasing effects. Stucco in considerable range of colour may also be used as a surface finish.

Warmth and dryness are qualities desirable in all buildings. These can easily be obtained in a concrete building. In general, warmth and dryness depend upon insulation. Even without the aid of insulating materials, concrete is a poor conductor of heat, and when used either with insulating membranes or by providing dead air spaces in walls, possesses ideal insulating qualities. Both of these methods of securing insulation are easily carried out with concrete. The usual inside finish of furring, lathing and plaster furnishes the necessary insulation to prevent condensation of moisture on the walls and provides added resistance to the passage of heat or cold. No moisture passes through dense well-built concrete. Concrete buildings are easy to keep warm in cold weather and comfortably cool in warm weather.

An exceptional degree of security against loss of life from tornado, earthquake and explosions is provided by the practically indestructible monolithic concrete structure. Many cases are on record where concrete buildings have withstood the effects of destructive forces. Life and property are truly conserved by such structures. Their occupants have the assurance at all times that they are enjoying the highest measure of protection against injury and loss.

CHANGE OF ADDRESS.

THE ORNAMENTAL STEEL MANUFACTURING CO. LTD. have transferred their registered offices from 2 Castle-reagh Street, Sydney, to 73 Redfern Street. The new offices are located at the corner of Redfern and Castle-reagh Streets, Redfern. The telephone number is Redfern 77.

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Great attention is being given at the present time to beautifying our cities, both in the way of erecting handsome buildings, and town planning.

For several years marble has been used for both inside and outside decoration, but it has proved unsatisfactory when exposed to the weather, and something of harder nature is required.

There is nothing better than our igneous rocks, such as granite, trachyte, porphyry, etc., of which there is an abundant supply.

Of the first mentioned rock a good supply is now to be had in Sydney, such as well-known varieties like Balmoral Red, Emerald Pearl, Goulburn Grey, Tarana Red, and Royal Blue. These rocks are very sound, of rich colour, and take a brilliant and lasting polish.

MESSRS. ANSELM, ODLING & SONS (A/SIA), LTD., 490-506 Riley Street, have erected extensive machinery, including saws, pneumatic tools, lathes, etc., for working these hard stones, and are anxious to carry out architectural work.

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VIEW OF LIMESTONE QUARRY, CARWELL CREEK, KANDOS

Building Materials and Craftmanship

The whole of the information in this section is supplied by the firms mentioned.

A MODERN CLUB HOUSE.

The new club house of the Royal Sydney Golf Club at Rose Bay is the most palatial structure of its kind in this country. Rising, as it does, out of the ashes of the old club house, the new building is fitted out to give the greatest amount of convenience to the members. From an architectural point of view, the beauty

builder who constructs, and all those who have been connected with the erection of this modern building can always look with pride on their handiwork.

The roof is covered with Welsh purple Bangor slates, 20 x 10, and contains 350 squares, the work being executed by W. Wilson & Co., Ltd., of Paddington, the three towers being roofed by the same material,



Residence for Dr. Lynch, Avoca Street, Randwick, roofed with Wilson's Specially Selected Dark Red Tiles.

of the design and the arrangement of the rooms will always be a credit to Messrs. Halligan & Walton, the architects. It is the architect who creates and the

the hips mitred. This work was carried out during the period when slates were exceptionally hard to procure, owing to the embargo placed by the British

Bathroom Requisites.

Summer brings with it a still greater call upon the Bathroom, and it is essential that all necessary fittings be provided to ensure the health and comfort of occupants of the home.

CRANE'S fittings are the last word in efficiency and lasting service, and our specialities include ENAMELLED BATHS, LAVATORY BASINS, PEDESTAL PANS & SEATS, CISTERNS, BATH HEATERS for Gas and Fuel, BATH MATS, NICKEL ACCESSORIES, TILES for Walls and Floors, and many other indispensable articles.

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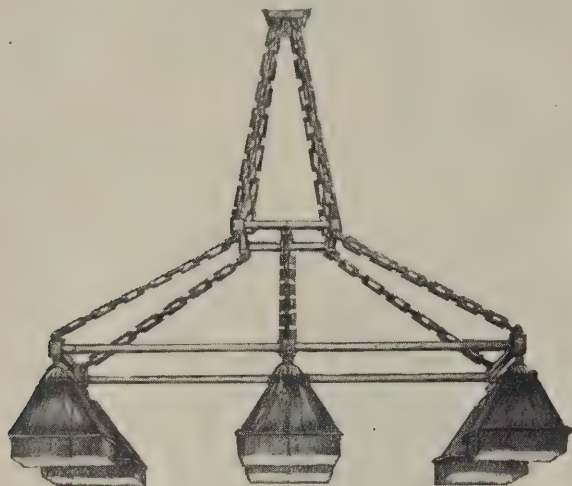


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Government on the export of slates from Great Britain. However, Messrs. Wilson & Co. were able to arrange deliveries through their London representative, and at no time during the contract was there any delay in the progress of the work.



Original designs in Pendant Fittings for billiard tables at R.S.G.C., supplied and manufactured by T. Train & Co.

The 20 x 10 Welsh purple Bangor slates used are recognised as being the finest roofing slates in the world, and it is no exaggeration to say that the roof of the new golf house is the finest in Australia.

The main entrance and steps are in Borenore marble, the work being carried out by Messrs. Holdsworth, Macpherson and Co. The ground floor covers three-quarters of an acre of land.

The building contains 40 bedrooms for the members, and 13 bedrooms for the staff. All the bedrooms are fitted with built-in dressing tables, lavatory basins, etc. These basins were installed by Messrs. Holdsworth, Macpherson & Co., and are known as the "T.W.B. Medicus" lavatory basin. They are made in white porcelain, and as they are surrounded in coloured Borenore marble, they look very attractive. The tops of the dressing tables are also made of this marble by the same firm. Nearly all the bedrooms open on to the balcony; some of them overlooking the harbour, and some the links. Hot and cold water is supplied to the

bedrooms as well as the thirteen bathrooms for the use of residents. There are also a number of other bathrooms for the use of golfers and non-resident members.



Calorifier used with the "Myrtle" Hot Water System.

They are replete in every way, and fitted with "Empire" syphonic closets. These fittings enhance the beauty of the bathrooms, and incorporate all the good features that a closet should have. They were installed by



Cylinder used with the "Myrtle" Hot Water System.

Messrs. Holdsworth, Macpherson & Co. Telephones are installed, and are connected direct to the exchange.

The dining-room has seating accommodation for 300. The lounge corridor and dining-room can be made into

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General Electrical Contractors

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Australian Museum, College Street.
Extension, Sydney University.

A. Hall & Co. Ltd., Furniture Warehouse,
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"Onslow House" and Flats, Potts Point,
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Wilga Flats, Macleay Street, for Stewart
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Power Installation for Freezing Plant,
Thomas Playfair Ltd., Shipping Pro-
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one large room by using the large sliding glass doors, and a first-class dancing hall is secured. The floor is of jarrah, and has been finished by the latest development in sanding machines.

In the east wing are situated the smoking-room, 38 ft. by 32 ft. 6 ins.; the private dining-room, card-room, bar, billiard-room, with two tables, and the

sanitary accommodation are all arranged between the two sections so that no one person has far to go to the bathrooms, etc. In order to minimise the sound made by spiked boots, the locker-room is floored with rubber lino.

Under the billiard-room is the cellar, wherein is situated the storeroom, cellarage, and hot water service.



The Club House of the Royal Sydney Golf Club.

locker room. A feature of the billiard-room is the entirely original lighting arrangements made by Messrs. J. Train & Co. A partition divides the locker-room into two sections, and the lavatory basins, bathrooms and

The hot water service consists of two No. 6 Myrtle boilers supplied by Messrs. W. G. Paton & Co., the manufacturers. Each boiler is fitted with an extra heavy copper generator of twelve square feet heating



N.S.W. Lawn Tennis Association new Club House at Rushcutters Bay, roofed with
Wilson's Patent Storm Proof Roman Tiles.



New Royal Arcade, George to Pitt Streets, roofed with
Wilson's Patent Storm Proof Roman Tiles.

Amongst these the following jobs have been completed, viz.:-

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Additional Wards, Coast Hospital, Little Bay	376 Squares
" " South Sydney Hospital.	55 "
New Public School, Lidcombe	45 "
J. Tait, Esq., Residence, Bowral	80 "

TILING

REDS—Residence, New South Head Rd. and Old South Head Rd., Rose Bay	33 "
Residence, Dr. Lynch, Avoca St., Randwick	45 "

CHOCOLATE—Coogee Bay Hotel	67 Squares
A. J. Milson, Esq., Residence, N. Sydney	50 "
also Special Shingling to Tower	
MOTTLED—S. Snow, Esq., Res., Wahroonga	90 "
BLACKGLAZED—Mr. Gowing's Residence. Strathfield	66 "
RED GLAZED—Residence, Wallaroi Cres- cent. Double Bay	22 "
SHINGLE TILES—Mr. McNaught's Resi- dence, Shaftesbury Road, Eastwood	73 "

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surface, with a transmission of approximately 304,000 B.T.U. per hour. They each supply two 120-gallon copper cylinders, these four cylinders being supplied and manufactured by the same firm, who enjoy a big



A corner of the Diningroom.

reputation for this class of goods. Their work, which they guarantee, is certainly of the highest standard, and comprises the manufacture of calorifiers, boot and



A view of the Smoke Lounge.

saddle boilers, copper tanks, jacket tanks, tilting pans, bain-maries, stew pans, stock pots, stills, etc., as well as steam pipes, attenuators, coils, etc.

The Myrtle boiler is installed everywhere, and in every instance gives satisfaction, it being most simple



The Bar.

to operate, and also most economical in its consumption of fuel; the fire, being controlled by a damper, is on the slow combustion principle.

In the east wing, provision has also been made for the future construction of a large swimming bath,



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***Amongst others the following
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All the Marble Work, Lavatory Fittings,
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All the Marble Work in recent additions
to the Central Railway Station,

The Terrazzo Staircase in Sir Arthur
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And at present in hand

All the Bathroom and Sanitary Fittings
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Marble Work in the new Commercial
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which it is eventually proposed to provide with hot and cold salt water pumped from the harbour.

The kitchen wing is on the west side, and contains a completely fitted, up-to-date kitchen, with both gas and fuel stoves, grillers, boilers, steamers, stock pots, bain-maries, etc. The scullery and servery adjoining is fitted in a modern manner with carving table handy to the entrance of the dining-room for economical serving. There is also a pastrycooks' kitchen, general storeroom, vegetable pantry, larder and refrigerating room fitted with the latest refrigerators supplied by Messrs. Wildridge & Sinclair. The servants' dining-room opens on to the back verandah, and has light and air on three sides.

The secretary's office and general office are arranged with every consideration for the comfort of the staff. There is a first-class strong-room, and telephones everywhere. The rooms of the hall porter and housekeeper are close to the office; also the cloak room.

The north-west wing is occupied by the ladies' locker-room, which contains 120 lockers, lounge, dressing-room, sanitary arrangements, etc. The dressing-room opens on to the main verandah, and provides easy access to the links without the members having to go through the main part of the building.

Opening on to the front verandah is a large tea servery, 40 ft. by 15 ft. This is to provide tea and light refreshment to the members who frequent the lawn and verandah, sometimes numbering, in the afternoon, 500.

In addition to the main stairs, there are three other stairs, which provide four means of escape in case of fire. In each tower there are three bedrooms, making a total of over 56 bedrooms.

As is to be expected in a palatial building of this kind, the electrical installation comprises something out of the ordinary in the way of fittings. Approximately 373 lighting points are provided, and 81 heating and vacuum cleaner points; mains are also run for motors for driving the refrigerating plant and boot-cleaning apparatus. The main board is situated

adjacent to the offices, and from this point, mains are run to seven lighting and eight power distribution boards. Semi-indirect fittings are used in the principal rooms, main corridor and landing, supplemented in the lounge, drawing-room, smoking-room, reading-room and writing-room by brackets and lighting plugs. The lighting of the dining-room is carried out by means of ceiling fittings. All bedrooms are equipped with a



Emeralite Portable Table and Reading Lamp,
supplied by the Australian General Electric Co.
for bedrooms in R.S.G.C. club house.

radiator point, a pendant light and a portable lamp, which can be used as a table standard or clipped to the head of the bed. Direct lighting is used on the verandahs, and, in addition, provision is made for festooning on special occasions. The whole of the installation has been carried out by the Burgin Electric Co. to the plans and specifications of Messrs. A. C. F. Webb & Burgess, consulting engineers, in conjunction with the architects.

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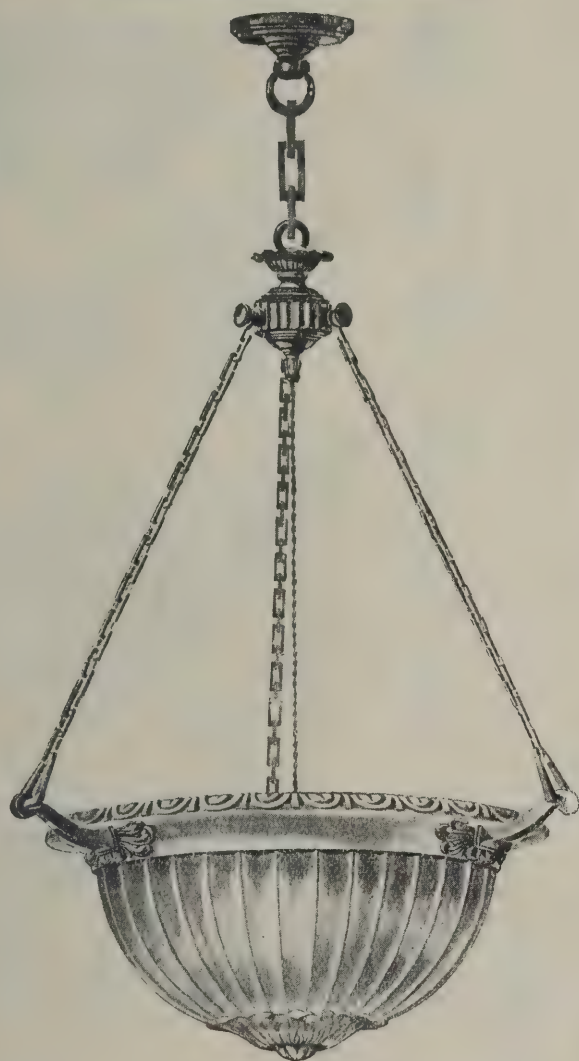
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REGD. TRADE MARK



REGD. TRADE MARK

All the electric light fittings have been supplied by the British General Electric Co., Ltd., Magnet House, 154 Clarence Street. A scheme of this nature, lighting a club where people seek pleasure and health, is a contrast to the majority of big warehouses, offices and commercial buildings, which this company has lighted with their high-class fixtures in Sydney, and in all the big cities in Australasia.

Portable "Emeralite" reading and table lamps are standard fittings in each bedroom, being supplied by the Australian General Electric Co.

The following represent a few contracts carried out by the British General Electric Co., which speak for themselves: Special fittings for the Theatre Royal, Sydney; Broughton House, Clarence Street; Messrs. Prouds, Ltd., Pitt Street; and the Australia Hotel.

At home, the mother company, the General Electric Co., Ltd., whose spacious showrooms and offices in London are at Magnet House, Kingsway, has recently completed the lighting scheme for Drury Lane Theatre. These fittings, of artistic design, were specially made for the theatre, which has been reconstructed.

Another large contract carried out in London was supplying fittings for the London County Hall, the new home of the London County Council, which was opened by His Majesty the King last July. These fittings of heavy cast bronze metal work were specially designed in collaboration with the architects so as to be in keeping with the general architectural scheme. A small idea of the immensity of this building will be conveyed by

the statement that $3\frac{1}{2}$ miles of main cable were used, and 15 lifts were installed, all by the General Electric Co., Ltd., London.

LABOUR-SAVING DEVICES.

Much thought and work has been expended on the ever-potent question of "Labour-Saving Devices." In these days of apartments, both large and small, luxurious flats and modern houses, it is rather remarkable to find how few people give any attention to telephone communication. As a labour-saving device, there is probably no instrument or article that can be more fittingly placed in that category than the telephone. It is generally associated with long-distance rather than local communication. When the matter is given consideration, it will be admitted that it is just as necessary to have an efficient and trustworthy service in and throughout an office, factory, warehouse, apartments or flat. Time saved in performing any act is naturally so much labour saved, with a consequent economy in money cost. As one of the chief aims of any business organisation is that of saving unnecessary expense, this matter should be given more attention than hitherto.

Telephone engineering has progressed to such a stage and in such a short space of time that it is even now found necessary to sub-divide this branch of electrical science. It is now common practice for a telephone engineer to specialise on transmission, automatic telephony, common battery telephony, long-distance communication, traffic distribution, line construction, conduits and cables, etc. It might also be held that there is no branch of science advancing at the same rate as telephone engineering.

The work of applying the telephone to the inter-communication systems necessary in business has not been the simple matter many would think. Generally, the average user of this wonderful and intricate apparatus only thinks of telephone engineering in terms applicable to the desk or wall set he has installed on his premises. There his vision ends.

THE BURGIN ELECTRIC CO., of 352 Kent Street, Sydney, has recently obtained the services of a telephone engineer lately with the P.M.G.'s Department, and is now in a position to advise all architects and builders in regard to any telephone service on the market. It also carries out installation and maintenance of all telephone systems and will only recommend the best in keeping with costs.

It can therefore be appreciated that all telephone work should be carried out by men well versed in such practice.

Automatic private exchanges are best suited, both from a cost and efficiency point of view, when over 32 lines are exceeded, and in some cases when over 25 lines.

There are several types of automatic private systems on the market, and the merits and demerits of these are well known to the above company. The staff engaged on this work are all post office telephone mechanics, consequently any class of work can be carried out with an assurance only possible when skilled labour is engaged.

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Set, as illustrated, consisting of:—

Mahogany pocket case.

Compasses, 6 in. double jointed, with needle point and lengthening bar.

Divider, 5 in., with fine adjustment.

Bow Pencil, 3 in., double jointed, needle points.

Bow Pen, 3 in., double jointed, hinged nib and needle points.

Spring Bows, set of 3, Pen, Pencil and Divider, needle points and central adjusting screws.

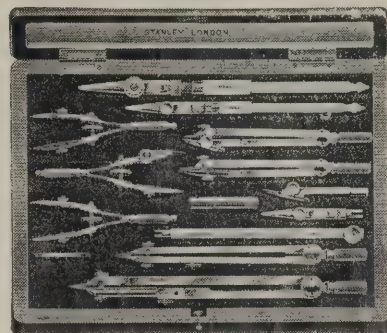
Ruling Pens, 5 in., with hinged nib.

Ruling Pens, 5 in., new patent, swivel nib, and large indexed adjusting screws. Spare leads and needles.

Price of Complete Set, £7/7/-

Set, as above, without Bow Compasses and Hinge to Nib of Small Pen, £5/-/. Being made by automatic machinery, all parts are standardized and replacements can be supplied at any time.

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GENERAL ELECTRIC GETS BIG PACIFIC COAST ORDER.

The Southern California Edison Company, Los Angeles, has just placed an order with the General Electric Company involving a total of 455,000-kva. of 220,000-volt transforming equipment, 60,000-kw. of 72,000-volt transformers, a 17,500-kva. generator, a 30,000-kva. synchronous condenser and a considerable amount of switching equipment, including eight 220,000-volt oil circuit breakers. This order is for additional equipment for the Southern California Edison's Big Creek No. 1 power house, and the initial equipment for the new receiving sub-station known as Laguna Belle, and it includes auto-transformers to be used in raising existing stations to the new transmission voltage of 220,000 volts. It is reported that the order will amount to over \$1,000,000.

ALL-AUSTRALIAN MANUFACTURERS' EXHIBITION.

One of the most attractive and interesting exhibits at the All-Australian Exhibition at Moore Park is that of JAMES HARDIE & Co., LTD., Sydney. This firm claims to have been the pioneers of asbestos cement sheets and slates in Australia, and are now sole selling agents for the Asbestos Slate and Sheet Mfg. Co., Ltd., Sydney, who have large works at Camellia, New South Wales, and Burswood, West Australia. It is worthy of note that the latter company is the largest manufacturer of asbestos cement sheets and slates in the Southern Hemisphere, and its works are as large as those of any other similar works in the world. James Hardie & Co., Ltd., are consequently in a unique position to give visitors to the exhibition interesting and useful information regarding this local industry. There

is much to learn from an inspection, more especially as it adjoins that of the Kandos Cement Company.

Included in the exhibit are two beautiful model bungalow homes with exterior walls and interior walls and ceilings of "Fibrolite" asbestos cement sheets, and roofs of "Fibrolite" slates. To those who propose building with this material, the models should be most interesting. An exhibit is also made of the raw materials from which "Fibrolite" asbestos cement sheets and slates are manufactured, viz.: Asbestos fibre and Kandos Portland cement. These minerals are shown in a case together, with large pieces of asbestos rock which is mined at Barraba, N.S.W. Then is shown the various "Fibrolite" products, including corrugated roofing sheets, flat sheets for walls and ceilings, red and grey slates, and shingles, rigging, guttering, etc. Fibrous plaster sheets in various patterns are also exhibited.

The building in which the exhibit of James Hardie and Co., Ltd., is made is constructed almost entirely of "Fibrolite," and gives a very good idea of the artistic appearance of the sheets when used for exterior and interior walls and ceilings, and the slates for roofing.

ROLLING AND GALVANIZING SHEET IRON.

The many stages in the manufacture of Armco Iron, which is produced by the American Rolling Mill Co., are interesting to architects and builders.

In the manufacture of high quality sheets, sheet bars must be carefully inspected and all bars containing defects such as pipe, seams, scabs and heavy scale are rejected. It is possible to roll imperfect bars into sheets and cover the defects by galvanizing, painting or other coatings, but the defects are still present and will cause trouble when the sheets are placed in service.

A sheet mill consists of two "stands" of rolls, a roughing mill, where the sheets are started, and a

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finishing mill with highly polished rolls, where the sheets are finished. The red hot sheet bars are drawn from the furnace and rolled in "pairs" on the roughing mill. When reduced sufficiently in thickness they are transferred to the finishing mill and rolled until almost cold. After re-heating, rolling is continued on the finishing mill until the required length and gauge (thickness) are secured.

When cool enough to handle, the rough edges of the sheets are sheared off by an electrically operated sheet shear. They are then passed between "cold rolls" to flatten them and to remove the wrinkles and buckles developed in rolling.

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Th galvanizing of iron and steel is for the protection of the base metal. The process is one of coating the material with zinc. It is impossible to galvanize greasy, oily or scaled sheets, so they must be thoroughly cleaned. This is done by agitating them in a dilute sulphuric acid solution for about thirty minutes, after which they are thoroughly washed in clear water. This process is called "pickling."

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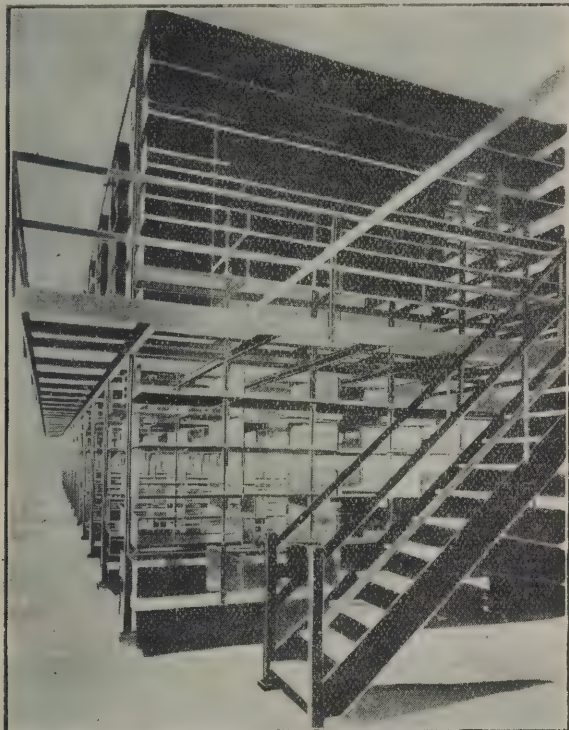
VIEW OF LIMESTONE QUARRY, CARWELL CREEK, KANDOS

Building Materials and Craftmanship

The whole of the information in this section is supplied by the firms mentioned.

A NEW AUSTRALIAN INDUSTRY.

STEEL PRODUCTS (AUSTRALASIA), LTD., whose registered office, showrooms and factory are situated at the corner of Redfern and Castlereagh Streets, Redfern, was formed last June for the purpose of producing



Record Room in the Registrar-General's Office

steel shelving on mass production lines. This company was formed with a nominal capital of £40,000, of which £15,000 shares have been issued to the investing public, leaving a further 25,000 shares for further issue to meet the inevitable expansion. The

directorate of the company comprises Messrs. Robert Sands, R. J. Coombes, and Chas. Benson. The last named is well known throughout the architectural and building circles as the managing director of the Ornamental Steel Manufacturing Co., Ltd. In passing, it might be mentioned that he has just completed his fiftieth year of business connection with architects and builders.

The initial plant, comprising presses, dies, etc., had to be imported, as it could not be obtained in Australia,



Adjustable Steel Shelving in a Weaving Mill Stores

but it is anticipated by the directors that they will be able to procure locally any plant that may be required in the future.

A visit to the factory and an inspection of this patented, adjustable shelving leaves two firm impressions—firstly, that the shelving is suitable for every variety of load, whether in retail stores, banks, record rooms, warehouses, institutions and other places, and, secondly, that the cost is exceedingly low, in fact, the same price as medium quality timber. Perhaps the last reason explains to a great extent why other makes

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of steel shelving hitherto offered on these markets have not found a ready demand.

This type of shelving possesses several advantages. In the first place the shelves in each unit can be raised or lowered without disturbing the contents of



Adjustable Steel Shelving in a Railway Depot

adjoining units. Another advantage is the easy manner in which they can be adjusted at the back of the uprights and without the use of bolts, and the superior method of fastening the back edge of the shelves to the backs are features which save a great deal of time in the erection. This system also makes it a very simple matter to make changes, or even transfer the shelving to another place.

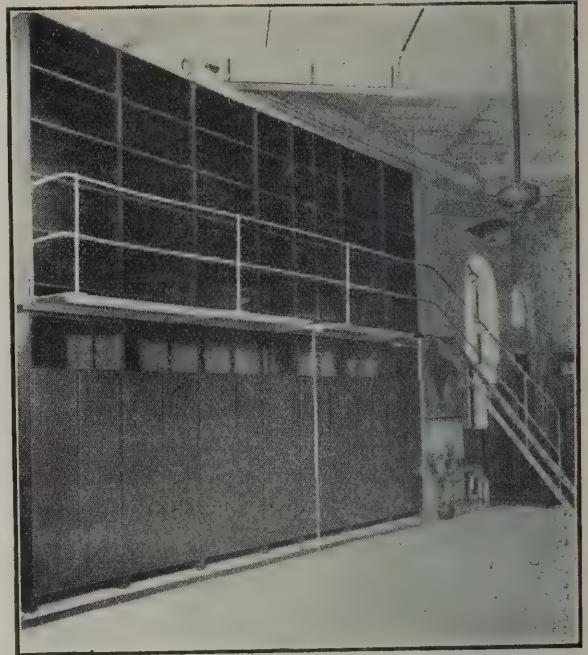
All the units used in erecting a stack of this shelving, pack flat. This ensures a minimum amount of space when the shelves are stored away, but most important of all, it means a minimum freight in transit.

The advantages of steel shelving over wood shelving are apparent to everyone. Steel shelving reduces the fire risk of a building, and this is a matter of paramount importance in these days of high structures. Anything that reduces the possibility of fire is certain to receive the attention of up-to-date architects and builders. In addition steel shelving is free from the depredations of white ants and other insects that attack wooden shelving, and is practically everlasting. The work is finished in olive green colour, double stove enamelled.

This type of shelving is being greatly used in all parts of the world, and its use even in the home is also ensured as it makes an ideal shelving for a library as the system allows such a wide scope to deal with the varied sizes of books. The value for library purposes has already been proved as three stacks, of nine tiers in height, and containing 43 miles of shelves were installed in the library of the American

Congress some few years ago, and although they have been in constant use they have given absolutely no trouble.

There is a wide field for this new Australian industry, which will employ Australian workmen and use only Australian material.



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It is interesting to note that Mr. R. J. Coombes, a director of the company, was the vendor of Steel Products, Limited, India, and secured the contract



What Happens to Wooden Shelving in a Fire

for the record shelving installation for the province of Bankipore, Bengal, erected in the High Court, Patna. The architect was Mr. J. F. Munnings, now of New Zealand, who delivered a most interesting address before the Institute of Architects, Sydney, on the 14th instant.

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MODERN PRACTICE OF VENTILATION.

By George Vincent, M.I.H.V.E. (Eng.).

Ventilation and its practice may be defined as that body of knowledge which is concerned with the distribution of air in a building, the physiological effect produced by its distribution, and its suitable conditioning.

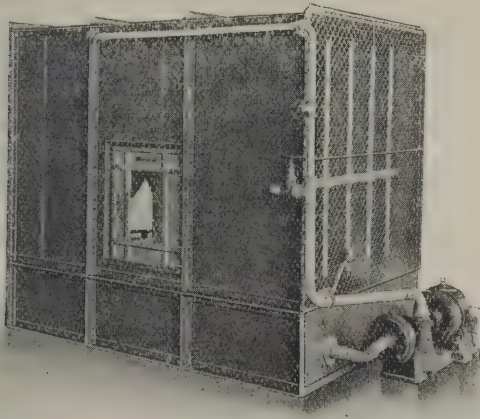
The necessity for ventilation arises from the unnatural conditions set up in a building by reason of the crowding into same of large numbers of people.

This congestion in public buildings produces an atmosphere detrimental to the health and comfort of the occupants.

It is the function of ventilation to offset these disadvantages, and to restore as far as possible the outside conditions and properties of atmosphere to occupied buildings.

The above stated definition of ventilation defines its scope and purpose, and necessitates the supply and equivalent distribution of pure air in sufficient volume, and of such character, as to provide for the following essentials:

Purity of indoor atmosphere; movement of air currents; suitable temperature and humidity; and further—the equivalent removal from the whole occupied area of the building of a sufficient volume of vitiated air.



A Modern Air Conditioning Plant.

The practice of ventilation is thus concerned with a providing of suitable machinery and apparatus, and a system of distributing ducts and registers to supply to a building a sufficient volume of pure-conditioned air so that the indoor atmosphere of the building when completely occupied will possess the essentials of purity, movement, temperature, and humidity.

Ventilation further provides for similar machinery and system of exhausting ducts for the removal of a sufficient quantity of vitiated air.

Modern laboratory research has removed the problem of ventilation from the field of chemistry to that of physics.

Until recently, the basis of design in ventilation systems was that of providing a sufficient volume of introduced air so that the indoor atmosphere could be kept within reasonable limits as to the proportions of carbon dioxide in the indoor atmosphere.

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It was understood that the presence of C.O.₂, in specified proportions in the indoor atmosphere did not alone possess injurious effects on the health of the occupants, but that it did constitute an index of other impurities arising from skin emanations, breath exhalations, etc., which had a deleterious effect.

The object and purpose of ventilation systems in the past has therefore been associated with providing a chemical purity in the indoor atmosphere.

Experience gained in the operation of well-designed systems of ventilation which provided a sufficient volume of introduced fresh air to dilute the indoor atmosphere to the necessary purity, showed that under certain conditions excessive heat and moisture were present, and caused much discomfort.

Investigation of these discomforting conditions by Physiologists proved that the problem of providing efficient ventilation was one of physics and not chemistry.

The Chicago Commission of Ventilation, as a result of very comprehensive research and testing, published their conclusions, and directed special attention to the fact that there was a range of temperature and humidity within which a comfortable atmosphere was produced, and which range was designated by them as the "Comfort Zone."

This term signifies that there is a maximum temperature and a minimum relative humidity, and a minimum temperature with a corresponding maximum relative humidity, between the limits of which the occupants of the building are comfortable.

In other words, there does not seem to be any arbitrary temperature or relative humidity but the maximum temperature which maintains comfort must be associated with a minimum relative humidity, and also the minimum temperature which will maintain comfort must be associated with a maximum relative humidity.

The minimum temperature of 64 degrees with a maximum relative humidity of 55 per cent., and a maximum temperature of 70 degrees with a minimum relative humidity of 30 per cent., proved by tests to constitute a range within which the Comfort Zone was established.

It is a common argument in text books and publications on ventilation, to stress the point that buildings provided with a ventilation and heating system possess an atmosphere of a too considerable dryness, and require additional humidity to make the atmosphere comfortable.

Obviously, as indicated above, the addition of humidity will depend on the temperature of the atmosphere in the building, it having been shown that comfort is only established by a right relationship between temperature and humidity.

Ideal conditions can only be maintained by automatic regulation of temperature and humidity, and it will be shown later that this regulation can be provided in the operation of an air conditioning plant.

The need of such automatic regulations is evidenced by the fact that the indoor atmosphere of buildings in winter is too cold and dry, and in summer too hot and moist.

Much of the dryness of heated buildings is due to the fact that air of low humidity extracts moisture from furniture, floors, etc., and thus liberates dust, which is picked up by moving air. This moving dust sets up irritation in the nose and throat, with the usual sensation of smarting.

This fact indicates the necessity of installing vacuum cleaning systems throughout buildings in order to properly remove all dust, and thus prevent in buildings which are ventilated and warmed, the liberation of dust by the absorption of moisture.

Modern research has established the fact that ventilation problems must be met and overcome in the realm

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of physics, and can no longer be solved by providing a specified chemical purity in the introduced air.

The importance of providing movement in air currents, correct relation of temperature and humidity, as well as the purity of introduced air, is therefore recognised as essential to comfort and health.

Within the scope of this article it is only permissible to briefly indicate the manner and scope comprised in the methods to be adopted to provide these essentials of purity, movement, temperature and humidity.

Purity of Indoor Atmosphere.

This first essential demands the supply of clean, pure outside air to counteract the vitiation caused by the crowding together, and the number of occupants.

Ordinary atmosphere contains—Oxygen, 24%.

Nitrogen, 76%.

C.O.₂, .0004%.

Vitiation rapidly occurs, as each adult inhales 20 times per minute approximately 30 cubic inches of air, and exhales at the same rate, oxygen 15.4% and C.O.₂ 4.3%. These figures show a marked deduction of oxygen in the exhaled air, with the result that the air in occupied buildings rapidly becomes devitalized. The oxygen content being the only component part which sustains life. The large proportion of nitrogen being inert and undergoing no change whatever during its passage in and out of the body.

The amount of C.O.₂ exhaled during 24 hours by an average adult is approximately 16½ cubic feet. The effect of breathing air with oxygen so far reduced in percentage as above shown, and so high in percentage of C.O.₂, is debilitating, also causing heavy and difficult breathing.

In addition to the above disabilities, the internal and external surfaces of the body exhale moisture at varying rates, and other less volatile substances are also exhaled at the same time.

This quantity of exhaled organic matter bears a definite percentage to the amount of C.O.₂ produced by respiration, so that the percentage of C.O.₂ is taken as an index of the quantity of odours due to exhalations in the air.

The quantity of fresh air needed to restore purity is naturally related to the amount of impurity imparted to the air by exhalations from occupants.

It has been theoretically determined that each adult person in good health exhales 7 cubic feet of C.O.₂ per hour, and in order to dilute the air to the highest percentage of efficiency, namely, 2 parts of C.O.₂ in 10,000 parts of air, would require 3,500 cubic feet per hour per person.

This result is altogether too costly to secure, and the standard of air provided is generally computed at 1,800 cubic feet of air per person per hour, and this amount should be the minimum provided in crowded buildings. When not possible to arrive at the number of persons who will occupy the building, the volume of air to be provided is computed on the basis of changing the air so many times per hour.

Movement of Air.

This second essential is important, as while the given amount of pure air may be introduced to restore chemical purity, it is necessary to produce throughout the occupied building a perceptible movement of the air currents.



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This is essential for comfort and health in order to maintain and assist the normal action of the skin in giving off heat in the form of moisture.

Obviously, this perceptible movement of air cannot take place if the temperature is much below that of the body, and air circulated in occupied buildings at less than 65 degrees Fahr. will not only prove discomforting, but constitute a menace to the occupants, especially those in a weak state of health.

The temperature of introduced air is therefore important, and is an essential in ventilation.

It will be shown later that a heating unit to raise the temperature of the introduced air is a necessary function of an air conditioning plant, and no system of ventilation can be considered complete without the heating unit.

Suitable Temperature and Humidity.

It has already been shown that a definite relation exists between temperature and humidity, in order to provide comfort in the atmosphere, and it is thus convenient and necessary to consider them jointly.

Temperature has been just referred to in relation to its effect in the perceptible movement of air currents, but it has another important bearing in respect to maintaining an atmosphere which in relation to the moisture or humidity to allow respiration from the interior and exterior of the body to function normally.

The relation between the humidity of the air and the temperature constitutes the relative humidity which is

the real factor for comfort and health in the inside atmosphere of occupied buildings.

To state this matter in another way, would be to say that relative humidity is the relation between the wet bulb and dry bulb thermometer.

The wet bulb is the determining factor of comfort in the atmosphere, and not the dry bulb.

One effect of crowding people into buildings is to create a great increase in both the humidity and the temperature, and this prevents, or at least interferes with, the respiration of the body, preventing the body losing its increased heat by evaporation.

The high temperature of surrounding air in occupied buildings is caused by the heat given off there by the oxygen.

This amount of heat is considerable, as each adult will give off on an average 400 B.T.U's per hour, of which 150 B.T.U's may be assumed to be the latent heated evaporation, while approximately 250 B.T.U's will be the sensible heat given off by exhaled air from breathing and by convection to the surrounding air.

Assuming that the standard quantity of air is being supplied to the building, *i.e.*, 1800 cubic feet of air per person per hour, and the above added heat is introduced into the indoor atmosphere by the occupants on the basis of 400 B.T.U's per hour per adult, the temperature would rise approximately 8 degrees above the temperature at which the air is introduced into the building. So that in order to maintain a temperature of, say, 70 degrees, the temperature of the introduced air at the registers would require to be 62 degrees. There is necessarily a limit to the difference in temperature allowable between introduced air and the building temperature, and this limit largely depends on the position and sizes of inlet openings as causing the production of cold draughts.

The position of inlet registers on side walls at from 8 to 10 feet from floor level is therefore correct to eliminate draughts so far as possible.

The maintenance of correct indoor temperature is principally concerned during warm weather with introducing air through the supply registers at a temperature lower than the building temperature in order to counteract the added heat given off by the occupants, and, as above stated, the temperature of introduced air at the registers should be approximately 62 degrees.

This lowered temperature in the introduced air can only be supplied by the employment of an efficient air conditioning plant in which the introduced air can be lowered approximately to the wet bulb temperature. To still further reduce the temperature of the introduced air, ice blocks can be supplied to the tank of the plant, thus decreasing the temperature of the spraying water, and providing some measure of dehumidifying.

During cold weather the maintenance of proper indoor temperature is principally concerned with the raising of the temperature of incoming air above that of the building temperature, as the added heat given off by the occupants will not be sufficient during these low temperatures to maintain a comfortable temperature. It will be shown later in discussing the air conditioning plant, that increased temperature of the incoming air can be provided in some measure by heating

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the water of the tank, thus supplying high temperature water at the atomizing spray batteries. It will also be shown that in order to provide the necessary B.T.U's to raise the temperature of the volume of air, it is necessary to furnish a heating battery in which the employment of live steam or hot water as the heating means, is necessary.

The relation of room temperature and the humidity of the air, which constitutes the relative humidity, has also been shown to be important, and it is essential during low temperatures, that beside providing the incoming air at the necessary temperature, it should also be provided with any necessary percentage of humidity.

While the high temperature of surrounding air in occupied buildings prevents the loss of heat in the bodies of the occupants by reason of the high temperature of the surrounding air which under these conditions would approximate to that of the body temperature, it is also found that the abnormal moisture in the indoor atmosphere of occupied buildings when associated with high temperatures acts as a conductor to lead the excessive temperature in the air to the bodies of the occupants, thus increasing the discomfort. The effect, therefore, of high temperature and high humidity in association in indoor atmosphere, is to produce heat prostration, generally called faintness, beside the lowering of the vital functions and producing general discomfort to even the strongest occupant. Any increase in the wet bulb temperature of the indoor

atmosphere, indicating high moisture content, must be provided for by a reduction in the humidity of the incoming air, and any marked decrease in the wet bulb temperature must be provided for by the addition of humidity to the incoming air.

The essentials of a modern system of ventilation in respect to providing an indoor atmosphere which will furnish as far as possible the best conditions of comfort and health to the occupants are thus defined so far as the scope of this article permits. It is now necessary to define and illustrate the machinery, apparatus, and system of duct necessary to carry into effect the essentials as above set forth.

Introduced Air.

It is obviously necessary that all the air introduced into a building shall be drawn from outside sources free from contamination. The fresh air supply inlet must therefore draw its supply of outside air from a pure source so far as possible.

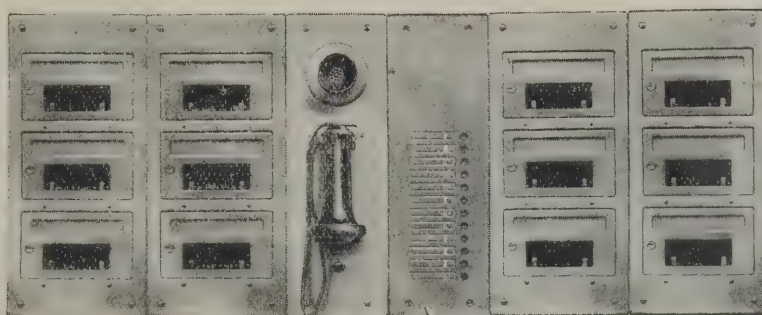
It will be generally found in city buildings that a position can be provided in a light area sufficiently remote from sanitary fittings and other sources of contamination. In practice, it is found impossible to introduce air into a building from any outside source of sufficient purity to provide proper ventilation.

Perhaps the chief and most dangerous of the impurities introduced from outside air is dust.

This elimination of dust and detritus is therefore essential, and modern ventilation practice demands the employment of an air conditioning plant.

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The removal of dust and other inorganic substances constitutes, however, only one duty of an air conditioning plant, as in its complete design and construction the volume of air to be introduced into the building is also cooled, warmed, and humidified if necessary.

The position of the fresh air inlet having been determined, it is necessary to provide an air supply duct leading the volume of air to the ventilation machinery which is usually placed in the basement.

Obviously, the position of this duct must be determined in harmony with the general building design, and the material of its construction will to some extent depend upon the position it occupies in the building. Preferably, its construction should be provided in either concrete or brickwork, with the inner surfaces rendered to a perfectly smooth surface with a steel trowel. Any changes of direction should be provided with easy radius so as not to set up undue frictional resistance. The duct should terminate at the ceiling level of the ventilation machinery room in the basement. It may under some circumstances be necessary to construct this duct of plain galvanized iron, in which case less space would be occupied, a smoother interior surface secured, and any changes of direction could be provided for with less frictional resistance. The sectional area of this duct is determined by the volume of air to be carried, and the predetermined velocity of the air.

The velocity must be kept within reasonable limits

to prevent undue resistance, and as will be shown later, to provide a proper velocity to the air conditioning plant. The average velocity of the air travel would mostly approximate from 1,500 to 1,000 lineal feet per minute.

The ventilation machinery room, which would be provided in the basement to be of sufficient size to properly accommodate the necessary fan, motor, air conditioning, including heating battery for the fresh air supply system, and also the fan and motor for the exhaust system. The connection from the air supply duct at the ceiling of the ventilation machinery room to the inlet end of the air conditioning plant, would be provided in plain galvanized sheet iron, with any changes of direction made with easy radius.

The air conditioning plant is a principal factor in the success of modern ventilation systems, and apart from it being an essential to success, it is necessary that proper knowledge and skill be provided in its design and erection.

The plant is of a composite character comprising horizontal water-tank and walls and roof, forming a chamber.

Atomized water spraying battery, battery of eliminator plates, and also provided with centrifugal pump driven by electric motor, for circulating water from the horizontal water tank to the spraying batteries. The capacity of the plant to be determined by the volume of air which it is required to condition.

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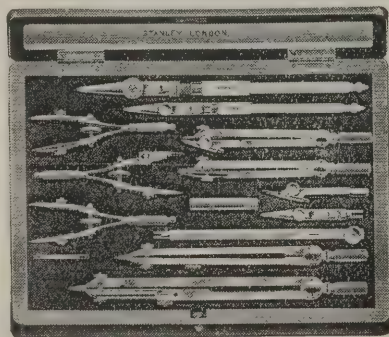
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PICNIC AT KILLARNEY.

The first annual picnic of the employees of the Asbestos Slate and Sheet Mfg. Co., Ltd., Camellia, was held at the Killarney Pleasure Grounds, Middle Harbour, on Saturday last. The Directors of the Company, Mr. G. R. Sutton and Mr. S. D'Arrietta, attended on invitation, and helped to render the occasion an enjoyable one. In all, over 950 attended.

A lengthy and comprehensive sports programme was the chief attraction, and everyone was keenly interested in the various events. The weather, which in the early part of the day had looked somewhat threatening, improved as the day progressed, with the result that the sports programme was carried out under ideal conditions.

The results of the sports were as follows:—

Works Championship (100 yards).—1st, J. W. Death; 2nd, B. Main.

Married Ladies' Race (50 yards).—1st, Mrs. T. Vost; 2nd, Mrs. W. Tymms.

Tug of War.—Won by Saw Mills Team.

100 yards Boys' Race.—1st, Taylor; 2nd, Hulbert.

Committee Handicap.—1st, M. May; 2nd, T. Vost.

Girls' Race.—1st, Miss Buckmaster; 2nd, Miss Rogers.

Old Buffers' Race.—1st, T. Buckmaster; 2nd, J. Lowry.

Single Ladies' Race (50 yards).—1st, Miss Rogers; 2nd, Miss Healy.

100 Yards Open Handicap.—1st, Trevallian; 2nd, Walters.

Special Race, Married Ladies.—1st, Mrs. Mitchell. (The prize for this race was donated by the Works Manager, Mr. C. P. Truman.)

AN ARC-WELDED BUILDING.

The General Electric Company, who are the principals of the Australian General Electric Co., Ltd., have recently put up a building in which the structural steel work was welded instead of riveted together, use being made of arc-welding apparatus.

This is an innovation of far reaching significance, although the building chosen for the experiment was a small one, measuring 40' x 40' x 40'. In a riveting job the work requires a gang of four men, viz., a "heater and thrower," a "driver." These picturesque names are doomed, for when the weld replaces the rivet two men at most will be required instead of four, and a 50% saving in labour is a matter of importance.

In this building rivets would have involved marking and punching 4500 holes. That labour was avoided. There would have been required 1800 rivets weighing 1000lbs. That expense was saved, less the cost of 150lbs. of welding wire.

In addition to this building, the General Electric Company has a runway for a five ton crane welded instead of riveted, and a bridge connecting two buildings. The possibilities in the arc-welding field are fascinating.

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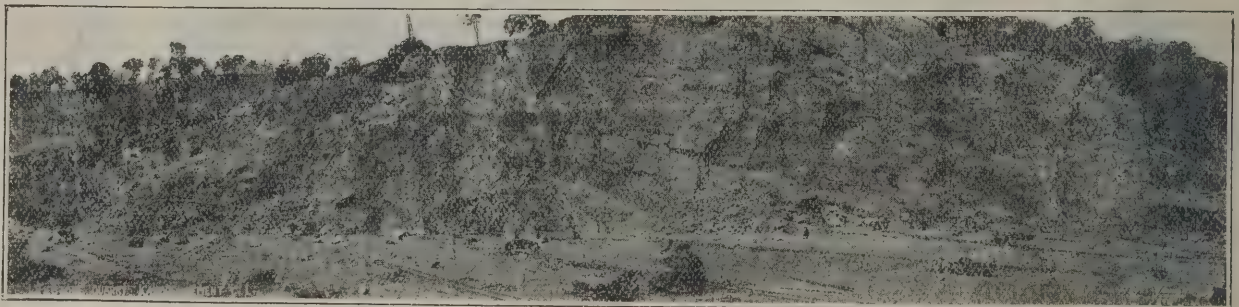
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Building Materials and Craftmanship

The whole of the information in this section is supplied by the firms mentioned.

PLAN REPRODUCING.

In the industrial life of a community many functions are performed, of which, although of vital importance to the progress of the people, comparatively little is known to the outside world. Those performing these functions are, as it were, the small cogs of a gigantic machine and whose duty it is to assist in the perfect running of the machine. The world at large sees the complete machine; but the cogs, doing their work silently and effectively, are beyond the ken of the ordinary man.

In the architectural profession the outstanding figure is the architect, but he has many assistants in order that his work may be carried out expeditiously and in keeping with the traditions of the Art. Probably the architect's most valued assistant is the plan reproducer, the man who sees that his plans are faithfully reproduced for the guidance of the builder who carries the architect's plans into execution.

Mr. H. E. Garraway, of Rolyt Chambers, 13 Bridge Street, Sydney has been connected with the building and engineering life of Sydney for the past twenty years. He is one of the cogs in the building machine, his work comprising the reproducing of architects' and engineers' plans. To the uninitiated the work seems simple but like all other callings there are many things that can only be found out by practical experience. There is no rule of thumb for this work as it is very rare to find two plans which have to be copied that will print in the same time. The difference in the quality of the linen or paper and the blackness of the lines themselves are two instances where experience is essential if good work is to result.

In plan reproducing time is one of the main factors, and to work fast men must have sufficient room. One of the features of Mr. Garraway's premises is the admirable manner in which the machinery has been arranged to expedite the work. There is ample space to cope with the largest plans. Blue prints, helios and sepia prints all show the high standard of work

turned out by Mr. Garraway. In order that clients might receive their prints without delay he has installed electrically heated appliances which completely dry the prints in three minutes so that the work is practically turned out while you wait.

Mr. Garraway recently returned from a trip to England and America and while away took the opportunity to study the methods employed in those countries. Whilst these differ in some respects, according to the work to be done, in the main they are the same, and for the varied class of work necessary in Sydney, the machines in use here are the best obtainable.

During and since the war all classes of material used in the processes, and also drawing material, have deteriorated, and it is difficult to turn out such good work as formerly. This seems to be the case in England and America, as well as in this country.

A NEW APPOINTMENT.

The Australian General Electric Co., Ltd. have a new General Manager. It would be difficult to conceive a more popular appointment to this important position than that of Mr. A. Maughan. Universally popular, both inside and outside the house, his depth of character, integrity of purpose, and wonderful sense of justice have endeared him to every member of the organisation. Of unrivalled administrative ability, a logician, calm, deliberate and firm of decision (he is always accessible, sympathetic, but not of the maudlin sort). He is regarded with affection and esteem by the entire staff. Possessing a keen analytical brain his opinions are always valued by not only the engineers on the staff, but by the engineering fraternity generally. Without effort his mind seizes upon the important part of any subject, and presents in a few parts that which suggests the whole. A man of action, unostentatious, pregnant with sound business principles, his calm, sincere and just treatment to all inspire a loyalty that establishes the best foundation for successful business.

Bathroom Requisites.

Summer brings with it a still greater call upon the Bathroom, and it is essential that all necessary fittings be provided to ensure the health and comfort of occupants of the home.

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SIGNS OF THE TIMES.

There is a popular saying that "A poor workman always blames his tools." There is a lot of truth in this expression but it is not true in all cases. In the architectural profession bad tools mean bad workmanship. The architect when designing the plans for a new building is compelled to work to a small scale and in order to do this effectively he must have the best possible instruments for his work. In the world of scientific instruments the name Stanley has always been recognised as representing the highest quality that can be obtained. Stanley scientific instruments are recognised as being standard instruments, and by that we mean that they are recognised in all universities and colleges. The uninitiated may think that any drawing instrument is good enough for our students, as long as it can describe a circle, or whatever is required, but such is not the case. The instruments must be able to perform their work to a required standard, and it is because they can always be depended upon to carry out these requirements that Stanley products are known as standard instruments. There are other instruments that are regarded as standard, but Stanley instruments have always occupied the premier position.

Messrs. Fairfax & Roberts, of Hunter Street, have recently received a shipment of Stanley's celebrated drawing instruments of the latest pattern. Included amongst the sets of instruments are some new ones that have been specially imported to meet the requirements of our colleges and schools. These sets are being sold at a price that will enable all students to fit themselves out with a set of instruments at a very reasonable price. These sets differ from the more expensive ones only in the quality of the finish. The same care is taken in the mathematical accuracy of all instruments, irrespective of the price because behind the product stands the reputation of Stanley's.

The new sets of drawing instruments comprise everything that the student requires in order that he may become proficient in his profession. With instruments of this quality available at a moderate price

there is now no need for the student to blame his tools, nor is the question of price such a serious matter.

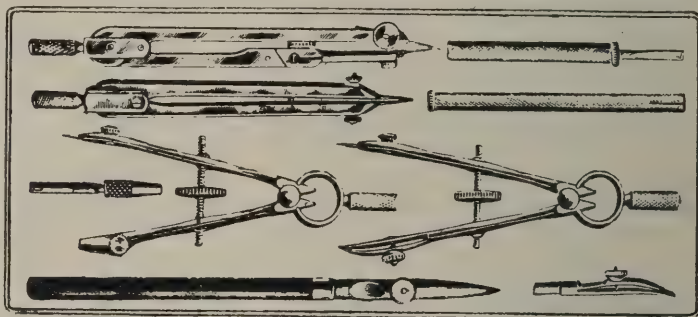
The architect of the future should have a look over these instruments, because with them he can always be certain that his finest work will be correct.

The beauty of a building depends upon the accuracy of the design. With Stanley instruments this accuracy can always be secured.

CONCRETE HARDENERS.

During the past few years it has become a recognised fact that concrete is the most efficient building material that it is possible to get, but at the same time experience has shown that there are some natural conditions which impair its efficiency. The most evident of these objections is that the surface of concrete floors, when subjected to the friction caused by walking, trucking or moving of heavy material, gradually wears away and it is only a question of time before holes and ruts appear. These must be patched up and repaired at considerable expense and in this connection the time lost during the progress of the repairs is also an expensive item.

Even before serious damage is done to the floors they



A Set of Stanley Instruments.

continually give off a dust which is injurious to the health of the employees and ruinous to the machinery and merchandise stored in the building. Ordinary concrete is porous and readily absorbs water so that it is difficult to keep the surface clean and dry. In addition to this ordinary concrete rapidly disintegrates when subjected to the influence of acids and alkalis.

In view of these well-known disabilities, architects and builders generally will be interested in Lapidolith, a liquid chemical concrete hardener that is being marketed by Messrs. John Danks & Son Pty. Ltd. Lapidolith through chemical action combines with the unhydrated Portland cement and forms a new crystal mineral which densifies the concrete by tightly filling all the tiny pores and also acts as a binder between the

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cement and other aggregate so that the resulting surface becomes almost as hard as granite, wear-resisting and practically non-absorbent. As a natural result the floor is easily kept clean and sanitary.

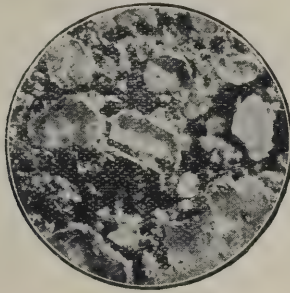
Lapidolith is supplied in crystal form, and it takes from one and a half to two gallons, depending on the porosity of the concrete, to cover 125 square feet. To produce a gallon of Lapidolith dissolve $3\frac{3}{8}$ lbs. in a gallon of water. After the crystals have been dissolved the liquid must be strained. The method of application is very simple and is divided into three treatments at intervals of 24 hours. The liquid is first divided into three equal parts and additional water is added. For the first treatment two parts of water to one of liquid

The liquid is simply flushed on the floor and spread with a broom until the surface is thoroughly and evenly saturated.

It is possible to harden coloured floors with this preparation but a different mode of treatment is employed.

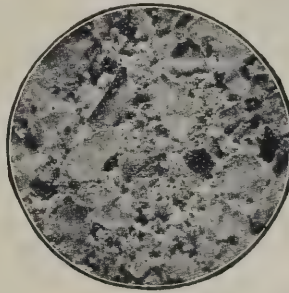
Although this material is new to architects and builders in this country it has been used extensively in America, the home of concrete construction. It has been in use for over ten years and has given satisfaction wherever used. Anyone with the slightest knowledge of American conditions knows that in that country tests are continually being carried out by independent authorities to discover the best materials for building

50 diameters



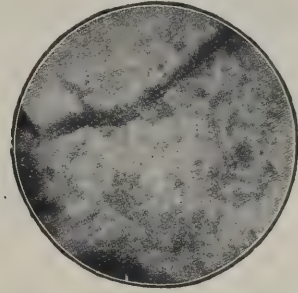
Untreated Concrete
Note the large numerous voids (black spots) and the roughness of the surface.

50 diameters



Lapidolized Concrete
Note the roughness is reduced and the voids have been filled by a net work of a newly formed hard crystalline substance.

120 diameters



Lapidolized Concrete
Note the new component formed by the action of Lapidolith on the cement matrix. An isometric crystal form is indicated.

are necessary; for the second equal parts of water and liquid; and for the final treatment one part of water to two of liquid. Before the treatment is commenced the floor must be thoroughly clean and free from dust, oil or grease.

purposes. Recently a test of concrete hardeners was made and the report shows that the concrete surface hardened with Lapidolith was not fully penetrated even after it had proved itself to be superior to the other materials tested.

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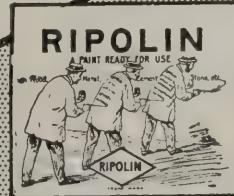
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What actually happens is that the application of Lapidolith results in the formation of a crystalline substance which fills in the voids and cavities, thereby acting as a binding agent and rendering the surface smoother and more uniform. This crystalline component also makes the concrete less permeable to water and other liquids.

The accompanying illustrations clearly show the effect of Lapidolith on concrete floors. The first two illustrations have been enlarged 50 diameters and the third figure 120 diameters.

SWITZERLAND.

The Chemins de Fer Federaux of Switzerland have a 60,000 volt cable for feeding their various sub-stations. They have experienced difficulty in protecting this cable from breakdown, due to ineffective lightning arrester equipment. A particularly heavy strain is introduced in sections of the Gothard tunnel where there are gaps of several feet in the trolley wire causing sudden interruptions of very heavy current, with resulting high voltage stress when the trolley passes. Finally the railway installed our type O.F. oxide film arresters, and it is with no little pride as well as pleasure that we have received from the S.E.M., who made the sale, a very interesting and comprehensive report by their Mr. Watelle, which says that the Chief Engineer, Mr. Stokart, and the Assistant Chief Engineer, Mr. Egg, are so well pleased with the operation of these arresters and the elimination of their former troubles that they have decided to standardise the O.F. arrester for their system.

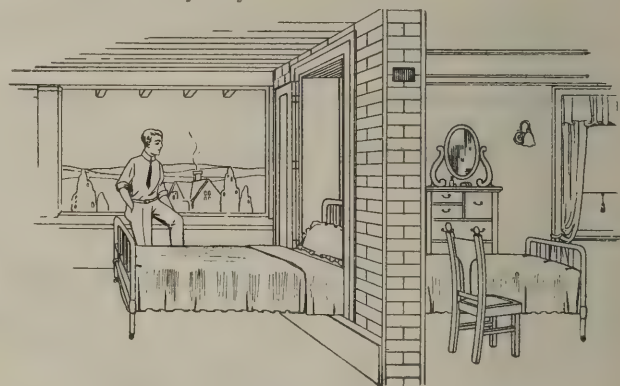
From observations of their executive officers in foreign travel, that the general acceptance in Europe and other countries of the pre-eminence of the General

Electric Co. in electrical engineering is now an established fact. This unrivalled position in leadership is of the greatest help in smoothing the way to commercial negotiations.

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Can a man be given a fair chance for health, freedom and the pursuit of happiness if he is lodged in a house equipped with PORTAL WALL BEDS, so placed that every room is capable of being used twenty-four hours every day?



A Wall Bed in a Room and on the Verandah.

Adherents of the old-fashioned homes, wherein the measure of domestic comfort was the number of rooms and the mass of furnishings, will scoff at this proposition on sight; but the modern man thinks very differently. To him a home is a resting place, and every

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device to reduce domestic tasks and increase comfort, will make the home and the sense of home a greater reality.

If a family can live in three rooms instead of in nine, just look what a saving of house labor it achieves! Sweeping, dusting, polishing, scrubbing, painting, carpet-beating, tramping, are reduced two-thirds. But is comfort correspondingly increased? Can a family find as much elbow room in three rooms as in nine? That depends on the equipment, the "domestic machinery" installed in the residence.

If we cut down the number of our living apartments to the minimum, we must fit these with appliances that will reproduce, in compact space, all the comforts that were scattered over the numerous rooms of the old-fashioned house. If we discard a bedroom, we must fit a bed into the living-room, and yet we must not encumber the living room with the bed during the waking hours.

The PORTAL WALL BED meets this dual requirement. It fits into an outside wall of the living room, and opens out either on to the verandah or balcony (to permit of open-air sleeping) or into the room. It is a door as well as a bed, and its reverse side can be converted into an article of furniture—a mirror, bureau, or writing-desk.



A Wall Bed in a Living Room.

It converts no less than three rooms into one, and makes the one room all the better furnished, and more livable than the three. It has been used in Sydney extensively in residential flats, and this also applies to bungalows.

Householders and flat dwellers with the bump of comfort largely developed looked with hostile eye on the advent of the Portal Wall Bed. Adopting the popular pessimistic attitude to a new idea, and without any practical experience on which to base their discontented mutterings, they argued that the Wall Bed was not comparable for sleeping comfort with the stationary bed, which has been our heritage since a cave-dwelling ancestor deposited himself nightly on the same bundle of grass in the same corner of his dug-out. When this theory was exploded by soft practical experience of the comforts of the Wall Bed, the pessimist found further outlet for his grumblings, by contending that the Portal Bed looked unsightly when let down. Once again, he had to admit defeat, for the oscillating Wall Bed is a full-sized steel and malleable iron engineering



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problem, combining utility with ball-bearing action that works to perfection. Since out-door sleeping has become so popular in Australia, still greater scope has been extended for the use of the Wall Bed. By its adoption, free use of the verandah or balcony is permitted during the hours of daylight.

Those unfortunate mortals who have been accused by contemptuous humanity of possession of two faces have, so to speak, nothing on the Wall Bed, which can show many picturesque examples of its double uses. A Wall Bed installed in a drawing-room may possess a Chippendale cabinet on its social side: in a dining room a sideboard turns its silver-plated front, guiltless of the fact that at its rear nestles a downy couch. In the living-room a writing-desk conceals, under the needs of the day, the soft requirements of the night. And so all the comforts of an extra bedroom are secured without extra work or expense.

Those who desire to reduce the cost of living, should call at the showrooms of the American Wall Bed Company, Denison House, 380 George Street, and have the advantages of these great labor-saving devices demonstrated to their satisfaction.

The Company welcome inquiries, and are always pleased to communicate with those people about to build or furnish. Not only can they supply you with the much-talked-of Wall Bed, but also within the last year or two they have placed on the market a Kernerator Incinerator, which completely does away with the use of garbage tins: this should be welcomed by all

householders, and already it has been installed in the modern buildings of Sydney. The first expense is the only expense, as it requires no extra fuel.

THEORY OF CONCRETE MIXTURE.

(An Extract from Duff A. Abrams' Paper Before The American Concrete Institute.)

The real problem in proportioning concrete mixture is to take advantage of the characteristics of the materials available. At the present time aggregate materials cannot be transported long distances; we may know ever so much about the ideal characteristics of sand and coarse aggregates, but we may not be able to get that type of aggregate. In other words, we must make the best we can of the materials available.

Our investigations have led us to the following principles:—

- (1) The strength of a concrete mixture depends on the quantity of mixing water in the batch, expressed as a ratio to the volume of cement *so long as the concrete is workable and the aggregates are clean and structurally sound.*
- (2) The effect of difference in the quantity of cement is reflected by differences in the water-ratio.
- (3) The sieve analysis of the aggregate is the basis on which proportions must be done. There is an intimate relation between the size and grading of the aggregate and the quantity of water required to produce concrete of a given workability.
- (4) It is not necessary, or desirable, that the aggregate be proportioned according to any fixed grading: wide variations in gradings of aggregate may occur without affecting the quantity of mixing water or the quality of the concrete.
- (5) Plasticity or workability is an essential requirement of concrete for structural purposes.

The sieve analysis expresses the life history of the material, so far as its concrete making properties are concerned. It is only necessary for us to interpret this information in order to use the material to the best advantage.

The mixing water in concrete serves two distinct purposes, although we do not always recognise these distinctions. One purpose is to supply the water necessary for the hydration of cement. The second purpose is to produce a plastic mixture. I do not believe anyone has determined just how much water is required for hydration, but such information as we have indicates that it is a relatively small percentage as compared to the quantity we must use in the concrete; probably not more than a quarter or a third of the water that is usually placed in the concrete. The excess of water over and above that required for hydration of the cement simply goes to produce a plastic mixture and is removed later by evaporation.

The water-ratio seems to be the factor which ultimately governs the strength and wearing resistance of the concrete. If we use one cubic foot of water (about 7½ gallons) to each sack of cement we would have a water-ratio of 1; a smaller quantity of water per sack would give a water-ratio of less than 1, etc. The usual water-ratio for ordinary conditions is about 0.8

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TO ARCHITECTS.

The Municipal Council of the City of Sydney invite Competitive Designs from Architects for Remodelling Unproductive Floor Spaces of the Queen Victoria Buildings, George Street, Sydney.

The project will take the form of a double competition and in the first instance is open to all qualified Architects who will receive the conditions and plans upon payment to the City Council of £1/1/-, which sum will be refunded upon the conclusion of the competition if a design is submitted.

Six designs will be selected from those submitted, and contingent upon the authors sending in drawings for the second and final competition, each will receive a sum of £150.

The Council agrees to employ the author of the design placed first in the final competition by the adjudicators as Architect for the work, and the remuneration shall be in accordance with the code of charges of the Institute of Architects of New South Wales, and the Council also agrees to proceed with the work within twelve months from the date of the adjudicators' award. Should the work upon the expiration of such period for any unforeseen reasons be abandoned the author of the selected design is to be remunerated at the rate of 1½ per cent. upon the estimated cost of the work less the amount of premium, viz., £150.

Any ideas which the adjudicators may consider of value contained in five of the designs submitted in the final competition are to be considered paid for by the premium of £150, and should any such ideas become embodied within the completed design no further claim will be recognised by the Council.

Dated this Eighteenth day of November, 1922.

Town Hall, Sydney.

THOMAS H. NESBITT,

Town Clerk of the City of Sydney

or 0.9, or about 6 to 6¾ gallons per sack of cement. In dealing with water-ratio we disregard water absorbed by the aggregates, although water mechanically held by the aggregate would be considered. A great many tests carried out in our laboratory, and those made by others, have shown that the water-ratio is a reliable factor in studying the characteristics of concrete. Anything that can be done in improving the grading of the aggregate, in the use of more cement or different methods of finishing or placing concrete, in order that it may be placed with a lower quantity of mixing water—all these things are simply means to an end; namely, to produce a plastic concrete with a lower water-ratio.

This brings us to a point which is generally overlooked in our building codes and other documents of that kind. It seems to be the opinion that increasing the quantity of cement is the cure for all the difficulties of weak or inferior concrete. However, if adding cement is not at the same time accompanied by a reduction of the water-ratio, it does not accomplish any useful purpose. The water-ratio may be changed, due to changes in the relations of the quantity of cement, grading of aggregate, or changes in relative consistency of the concrete; however, we arrive at the same result, indicating that the water-ratio is the thing that actually controls the strength and other properties of concrete.

It is not necessary, or desirable, that the aggregate be proportioned according to any fixed grading; wide variations in gradings of aggregate may occur without

affecting the quantity of mixing water or the quality of the concrete.

Plasticity of Concrete.

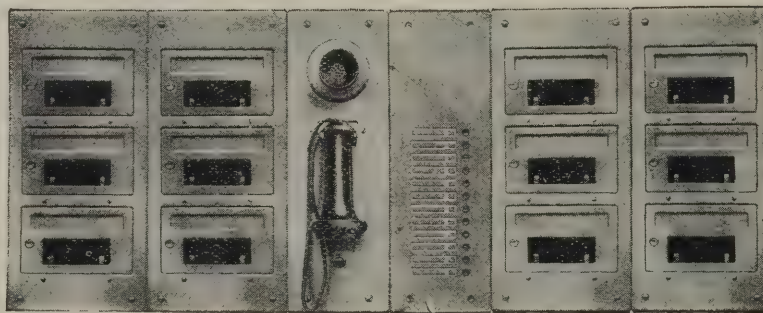
The question of plasticity or workability of concrete, is a very important one. We are hedged about on all sides by the requirements of plasticity. We could not use concrete at all if it were not for the fact that it can be mixed in a plastic condition and placed as such. We must put in enough water to make our concrete plastic so that it can be worked into place. Now, as to the method of measuring or controlling the plasticity of concrete: this is one of the questions which is giving engineers more concern to-day than probably any other one thing. A number of methods have been suggested, and a great deal of experimental work is now under way. The method which probably has met with most common use, because of its simplicity, is the slump test.

The Bureau of Standards is responsible, I believe, for a method which is known as the flow-test, in which a sample of the concrete is placed on a horizontal table, which is raised and dropped 15 times in about 10 seconds, thus flattening out the concrete. The spread or increase in diameter is taken as a measure of the plasticity of the concrete.

There is a great need for constructive research in developing a satisfactory and practical method of determining the plasticity of concrete. Any method which is used for this purpose in the field should not

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be interpreted too strictly. In other words, if our specification indicates that the concrete should be mixed to a slump, say, of 6 in., we would not be justified in rejecting a batch of concrete simply because it gave a slump of 7 in. The purpose is to take care that the concrete does not habitually go beyond the quantity fixed by the specification. In most building construction, if you attempted to make a slump test, you would get nearer 12 in. than anything else. That is the type of concrete that we must guard against, and I believe that the big thing this test can do is to bring home the importance of the water control on building construction. I know that a great many people are skeptical as to the practicability of such control; some may still doubt whether an excess of water does produce an inferior concrete; but I can say with all the emphasis of which I am capable, that I am very sure it does, and that in many cases the concrete produced on the job has a strength of probably not more than 20 to 30 per cent. of the strength it should have, and probably not more than 60 or 70 per cent. of the strength upon which the design was based. So, under these conditions we should not be surprised to find inferior concrete, and we do find it too often."

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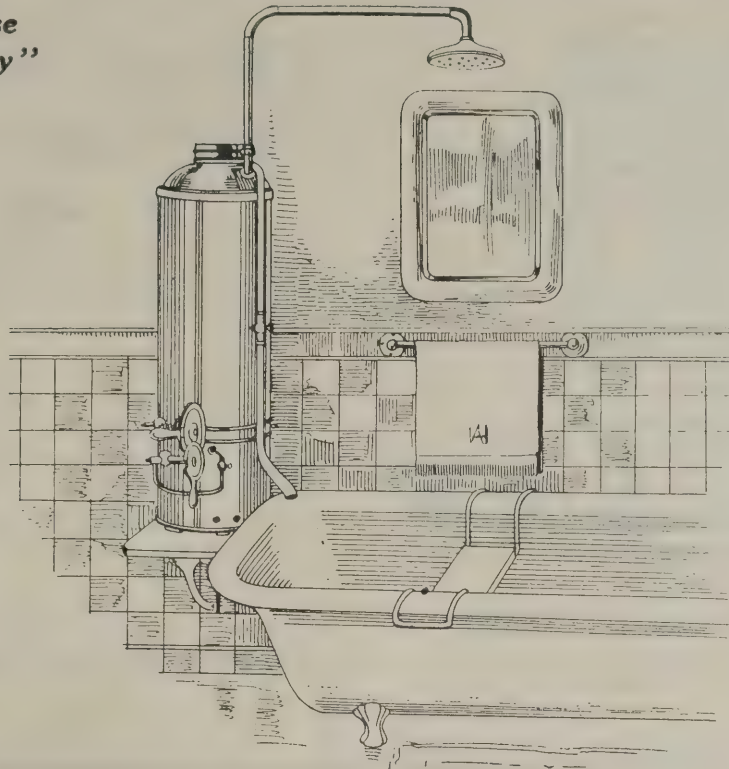


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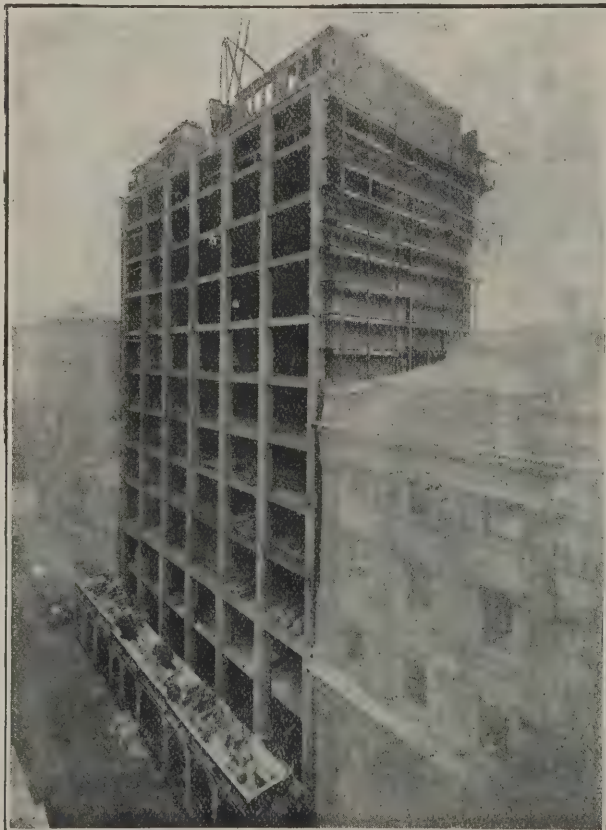
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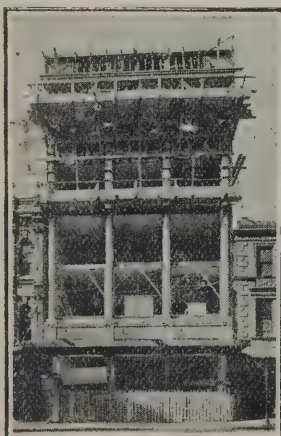
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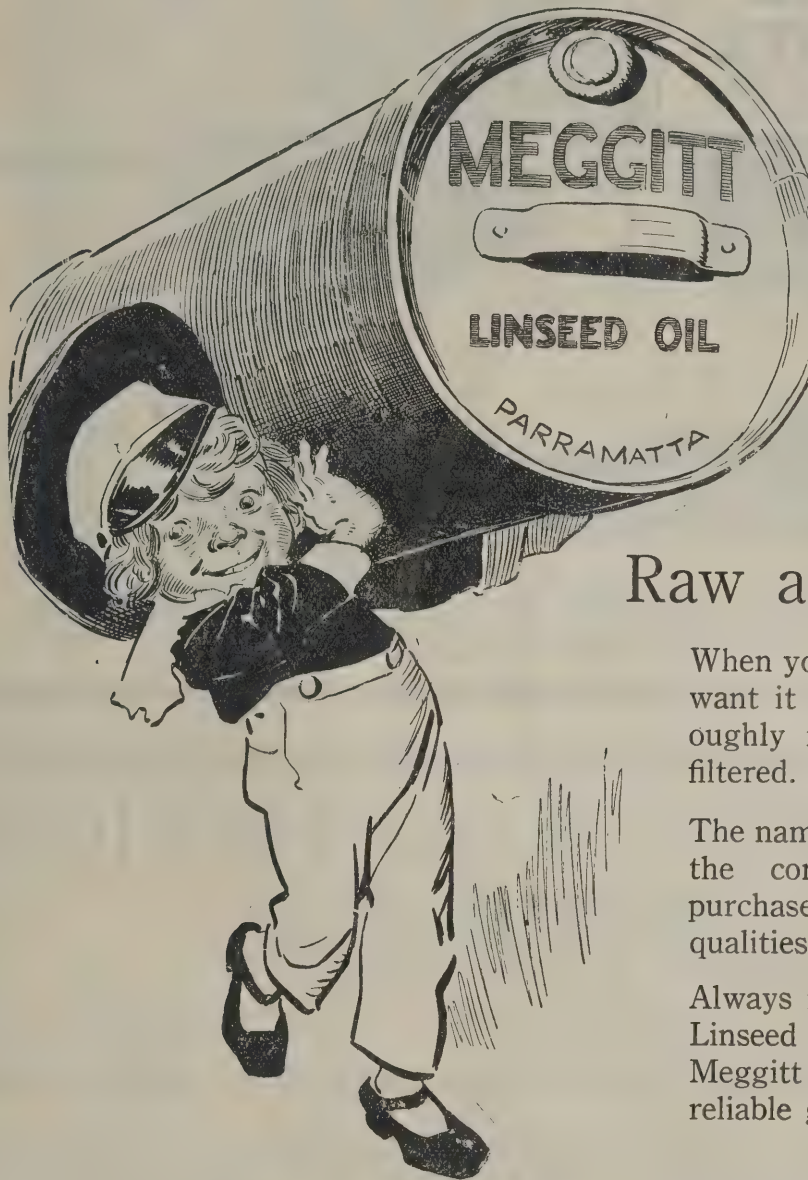
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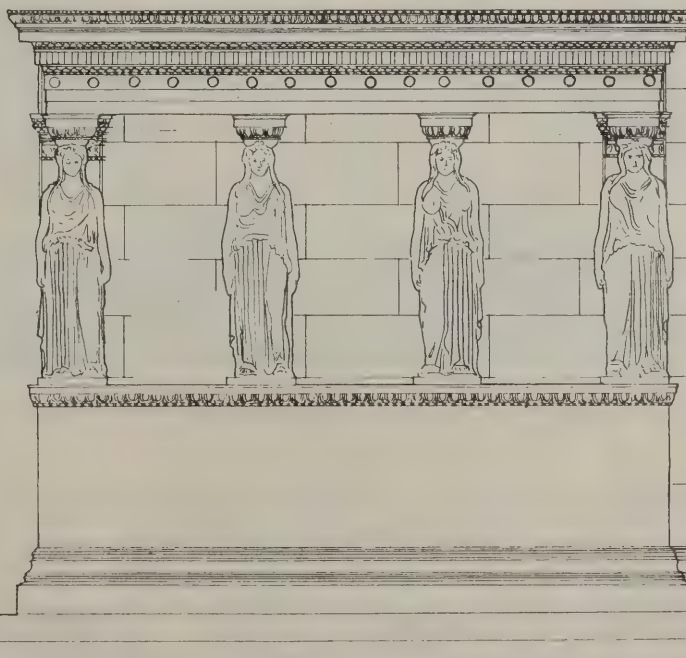
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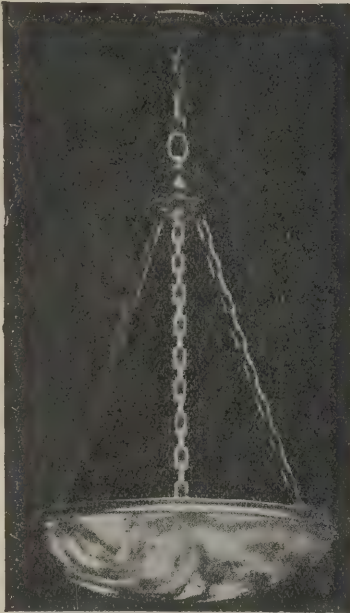
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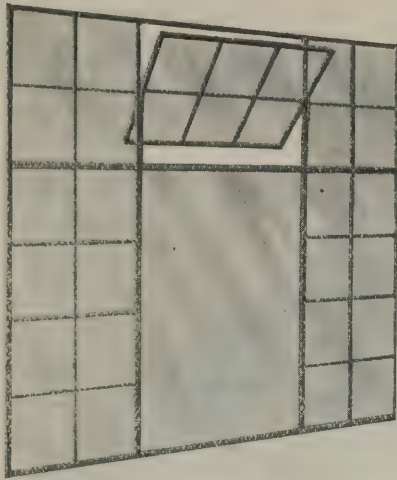
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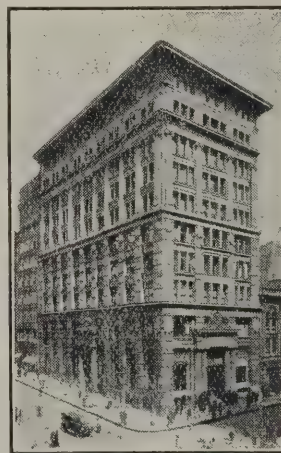
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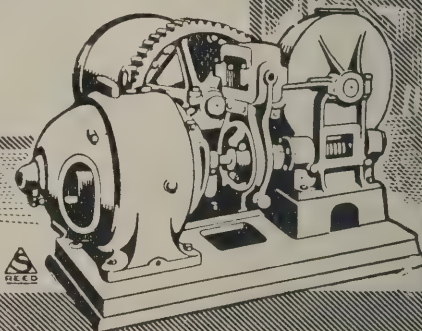
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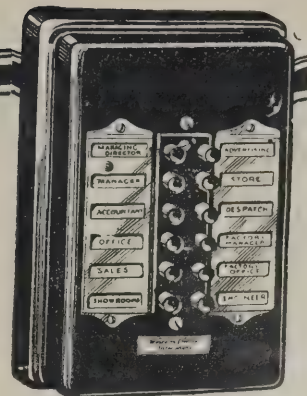
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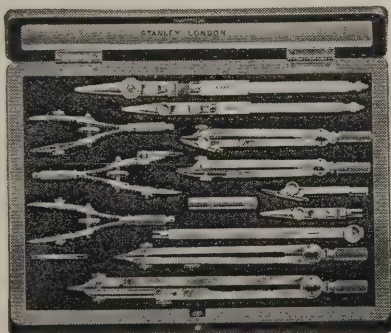
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